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1. When students avoid challenge
2. The Learning Pit
3. Using mistakes wisely
4. Using concepts to think deeply

SMALL STEPS THAT LEAD TO BIG GAINS IN STUDENT LEARNING
JAMES A. NOTTINGHAM

Læringsnøkkelen
Hvordan oppnå og innpasse til både læring?
James Nottingham

LÆRINGSREISEN
Hvordan skape allsidig læring og refleksjon i klasserommet?
JAMES NOTTINGHAM

Styrk læringen gjennom dialog
Challenging Learning

Styrk læringen gjennom feedback
Challenging Learning

You are welcome to download my slides here
LearningPit.org/portfolio/KECIBN2023

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Students CHOOSE EASY because they ...

- Feel clever / talented
- Get lots of praise
- Finish quicker

How can we make challenge more enticing?

Students AVOID CHALLENGE because they ...

- Feel frustration / make mistakes
- Think staff don't like struggle
- Fear it will never end!

The EFFECTS OF CHOICE on intrinsic motivation and related outcomes

A meta-analysis of 41 studies
Patall, Cooper, & Robinson, 2008

Effect Size **0.02**

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The LEARNING Pit

The LEARNING Pit

How do you respond when students are **CONFUSED** or make mistakes?

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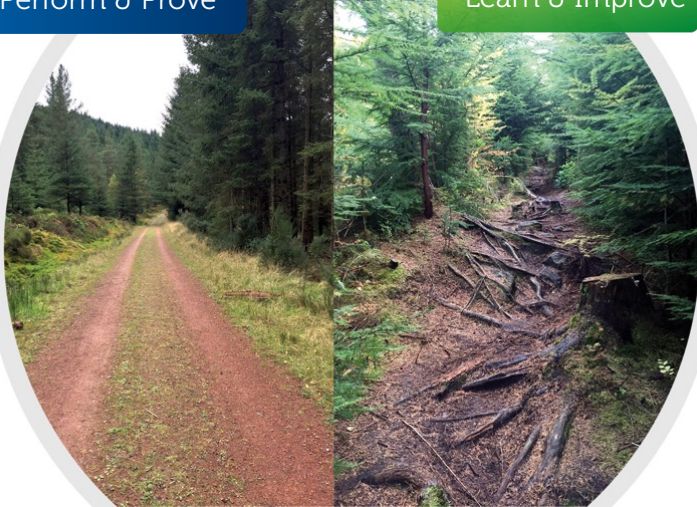


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Perform & Prove

Learn & Improve

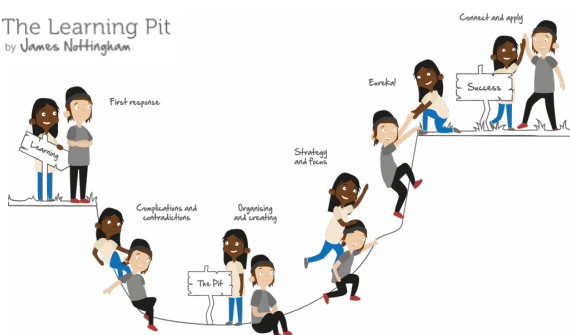


**YOU
CREATE
the
culture**

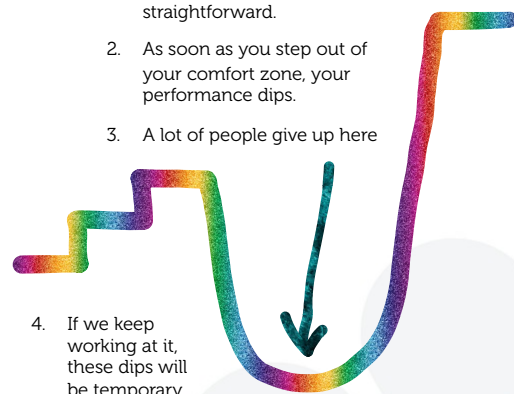


@JamesNottingham
@TheLearningPit

The Learning Pit
by James Nottingham




1. Success is not straightforward.
2. As soon as you step out of your comfort zone, your performance dips.
3. A lot of people give up here



4. If we keep working at it, these dips will be temporary.
5. "Working at it" means being risk-takers, reflective, collaborative, open-minded, balanced ...
6. Overcoming challenges is more satisfying than trying something that's easy.
7. So, let's do this together!

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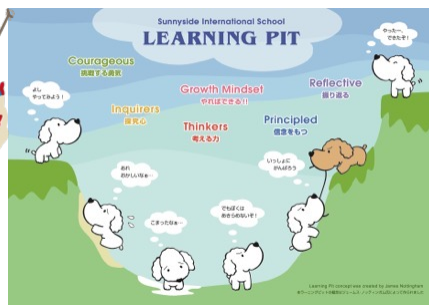
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—BEING *in the* PIT—

GOING *through* THE PIT



- INQUIRERS
- KNOWLEDGEABLE
- THINKERS
- COMMUNICATORS
- PRINCIPLED
- OPEN-MINDED
- CARING
- RISK-TAKERS
- BALANCED
- REFLECTIVE



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—BEING *in the* PIT—

GOING *through* THE PIT

Average study: $d = 0.40$

Flashcards & practice tests: $d = 0.50$

Study from corrected mistakes: $d = 0.96$



(Teachers using tests formatively: $d = 0.90$)

mistakes

RICHARD PHELPS (2012)
Analysed 669 studies published 1910-2010

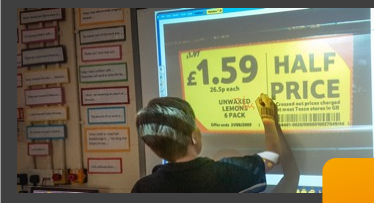
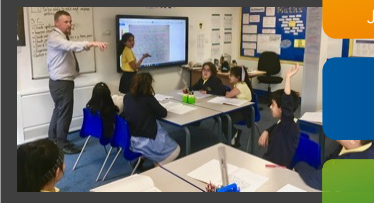
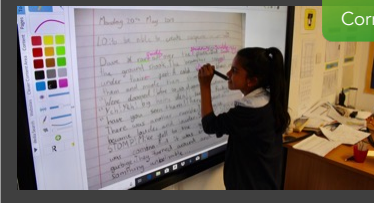
Circa 1910-1980: avoid mistakes

1980s onwards: evidence began to emerge that mistakes *can* be productive

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Mistakes are **not** marvellous!
Learning from **corrected** mistakes IS marvellous!


READY
Just enough to make a start

FIRE
First attempts (with errors)

AIM
Corrective & elaborative feedback

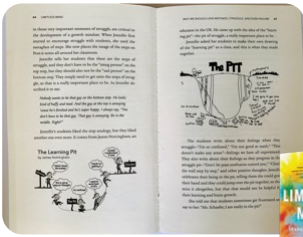
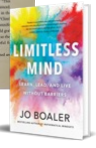
- Who can spot a mistake? (or possible improvement)
- Could you describe the mistake? (or opportunity)
- Can someone else say what might have led to the mistake?
- What options are there for improved or more accurate ways to solve / complete this?
- What is the general principle we can use in future to avoid making the same mistake again?





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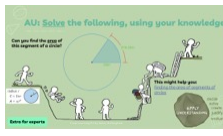


BEING in the PIT
GOING through THE PIT

"If STUDENTS DO NOT have to WORK HARD to make sense of what they are Learning, then they are LESS LIKELY TO REMEMBER IT in six weeks' time."
WILIAM, 2016

"WHEN LEARNERS DO WELL on a learning task, they ARE LIKELY TO FORGET THINGS MORE QUICKLY than if they do badly on the learning task. DESIRABLE DIFFICULTIES ENHANCE LEARNING."
BJORK & BJORK, 2011

"The MOST PRODUCTIVE CLASSROOMS are those in which students work on complex problems, are encouraged to take risks, and can STRUGGLE AND FAIL AND STILL FEEL GOOD about working on hard problems."
BOALER, 2019

INQUIRERS

KNOWLEDGEABLE

THINKERS

COMMUNICATORS

PRINCIPLED

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**I'm a natural
SELF-ESTEEM**

**I'll figure it out
SELF-EFFICACY**

CONCEPT

CRUEL

- Doing mean things
- Upsetting or hurting someone/thing

CONSTRUCT

- ✓ It depends!
- ✓ The size, length of time, and purpose all make a difference
- ✓ Some animals **HAVE** to be put in cages
- ✓ The type of animal makes a big difference too


CONSIDER

What are the best ways to write a coherent answer to the NAPLAN question?

CONFLICT

- !! Is it **ALWAYS** cruel to put an animal in a cage?
- !! How much difference does the size of the cage, the length of time in that cage, or the reason why they've been put in a cage make to the level of cruelty?
- !! Is cruelty sometimes necessary / right?

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CONCEPT
REAL
You can see real things
Real apples can be eaten

CONSTRUCT
We can recognise 'real' even without being able to explain it
Science and our senses can help a lot
Proof is important
So is reasoning

CONSIDER
How should we react when science conflicts with our opinions?

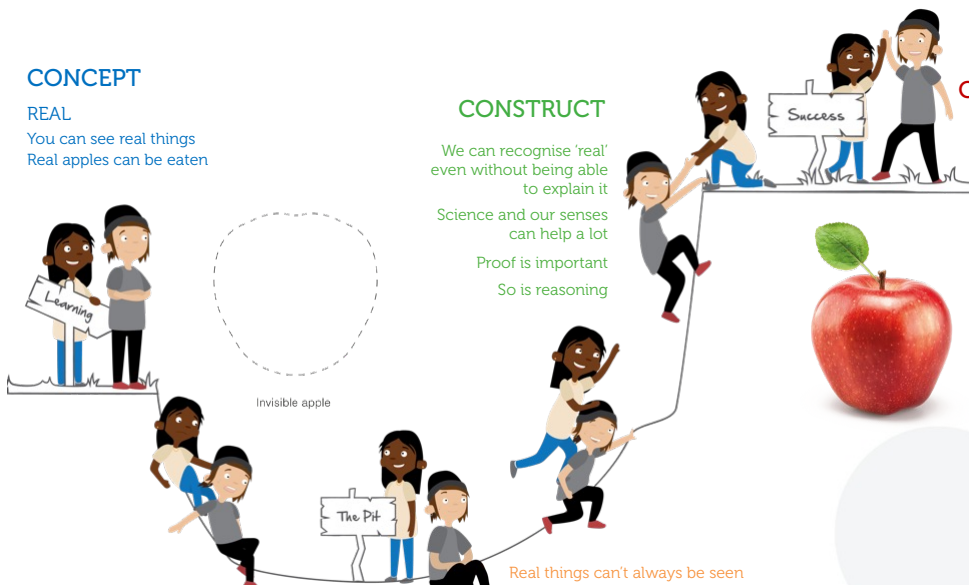

CONFLICT
Real things can't always be seen
Being seen doesn't mean it's real
We can use our senses
Sometimes our senses deceive us
Science can help

Invisible apple

Learning

The Pit

Success


NOT REAL

- Non-existent
- Fake
- Make-believe
- Pretend
- Unlikely
- Whimsical
- Mythical
- Synthetic
- Possible
- Maybe
- Positive
- Potential
- Probable
- Factual
- Sure
- True
- Actual
- Authentic

REAL



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