Provo City SCHOOL DISTRICT

The Call for Evidence-Based Practice

Ainsley B. Rose

Corwin Author Consultant &
Visible Learning Certified Trainer

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Additional Information

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WALT

We Are Learning To...

Learning Intentions

- Define evidence-based practice
- Reflect on the importance of EBP
- Review what is the latest evidence upon which to base our practice

WILF

What I'm Looking For...

Success Criteria

- Be able to refine our understanding of EBP
- Consider what it means of our teaching
- Apply the most helpful practices to our teaching

Why Evidence- Based Practice?

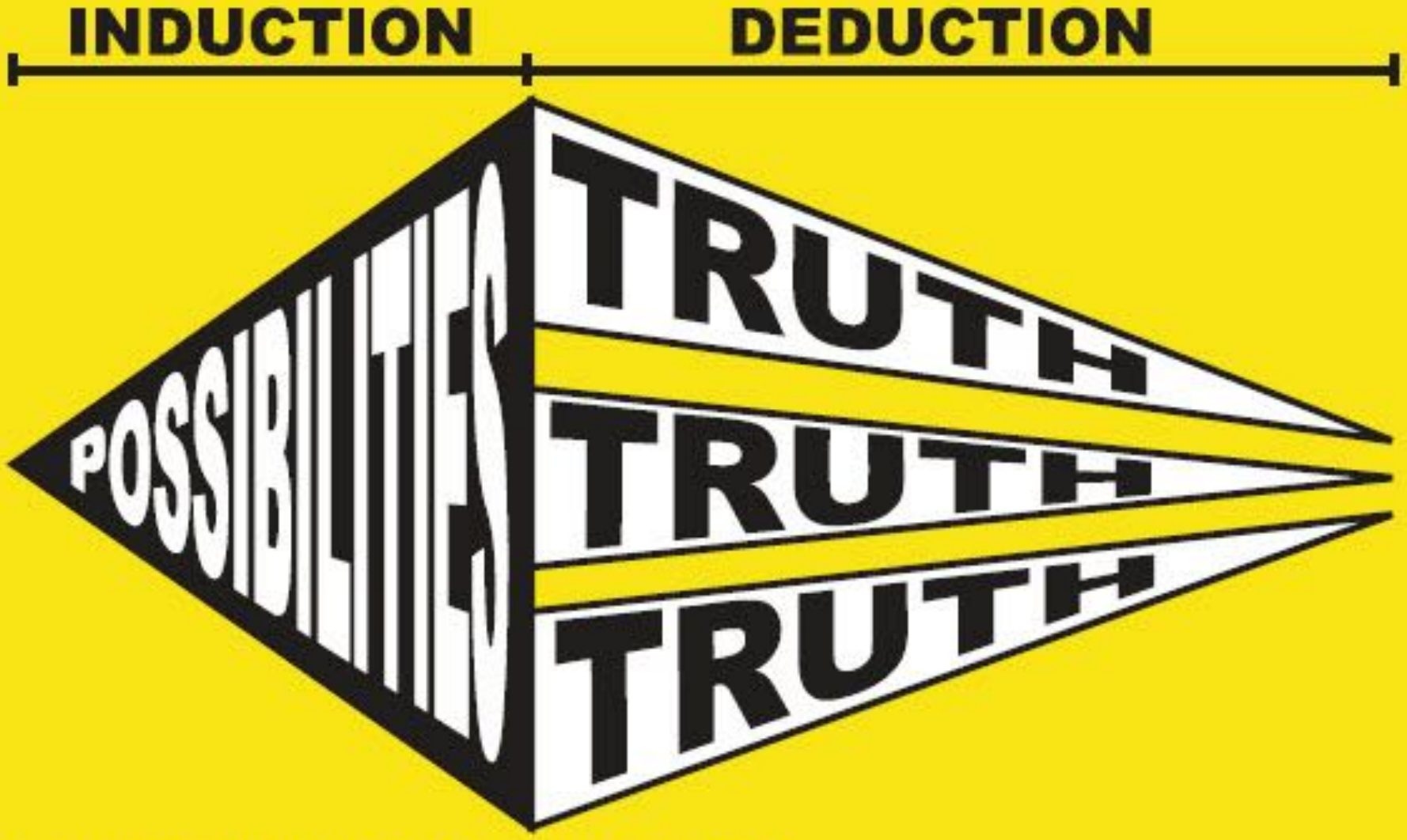
The Every Student Succeeds Act, the new reauthorization of the federal program designed to support the education of disadvantaged students, requires that states and districts use evidence-based interventions to support school improvement.

Timperely 2011

"…if teaching practice isn't deeply informed by a wider knowledge about educational research, research based on direct observation of classroom activity, and the theory underpinning it, then teaching becomes a personal, rather than a professional enterprise.

Evidence?

outcome of scientific research, organizational facts & data, benchmarking, best practices, collective experience, personal experience, intuition


INDUCTION
DEDUCTION
POSSIBILITIES
TRUTH
TRUTH
TRUTH

Evidence-based education operates at two levels. The first level is to utilise existing evidence from worldwide research and literature on education
and associated subjects.

The second level is to establish sound evidence where existing evidence is lacking or of a questionable, uncertain, or weak nature.

All educators base their decisions on ‘evidence’

However ...

Education is a fad-ridden profession

- We mistake opinion for fact
- Something written in a professional journal may be research but often is just opinions of the author
- Theories are just that - one has to do the research to prove or disprove a theory

Many educators pay little or no attention to the quality of the evidence they base their decisions on

Trust me, 20 years of leadership experience

so . . .

Teach educators how to critically evaluate the validity, and generalizability of the evidence and help them find ‘the best available’ evidence

EBP is a means to improve decision quality.

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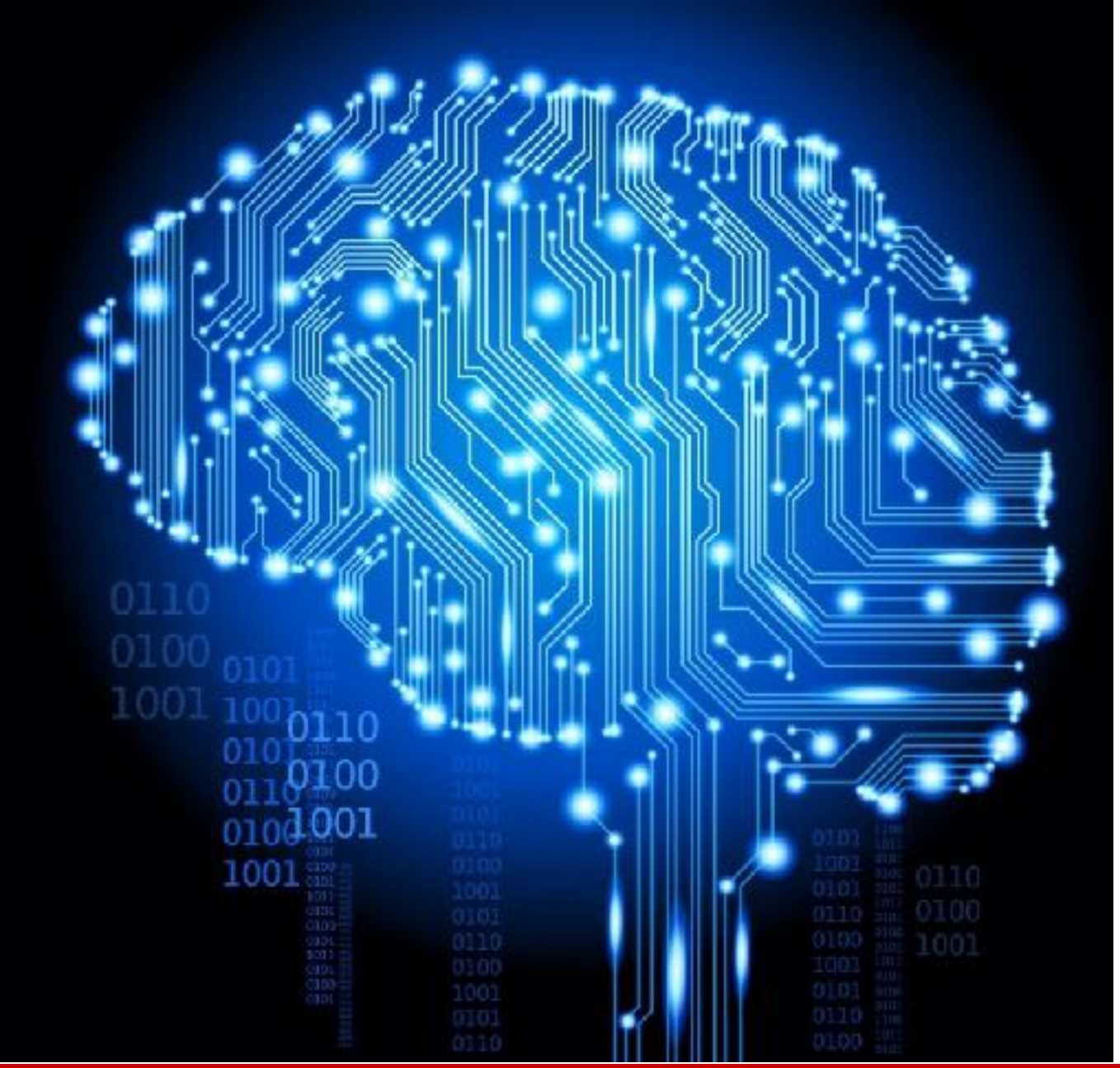
Evidence-based standards for effective teaching?

- Evidence about relationships between teacher skills, knowledge & behaviours and ‘effectiveness’
- Evidence about what can be changed (and how)
- Based on ‘best’ theories of
  - Pupil learning
  - Pedagogy & teaching effectiveness
  - Behaviour change (individual, institutional, systemic)
- **Most important: does focusing on these things lead to improvement?**

Source: Durham University

What kinds of skills, knowledge, behaviours, qualities and competences are required to be an excellent teacher?

Source: Durham University

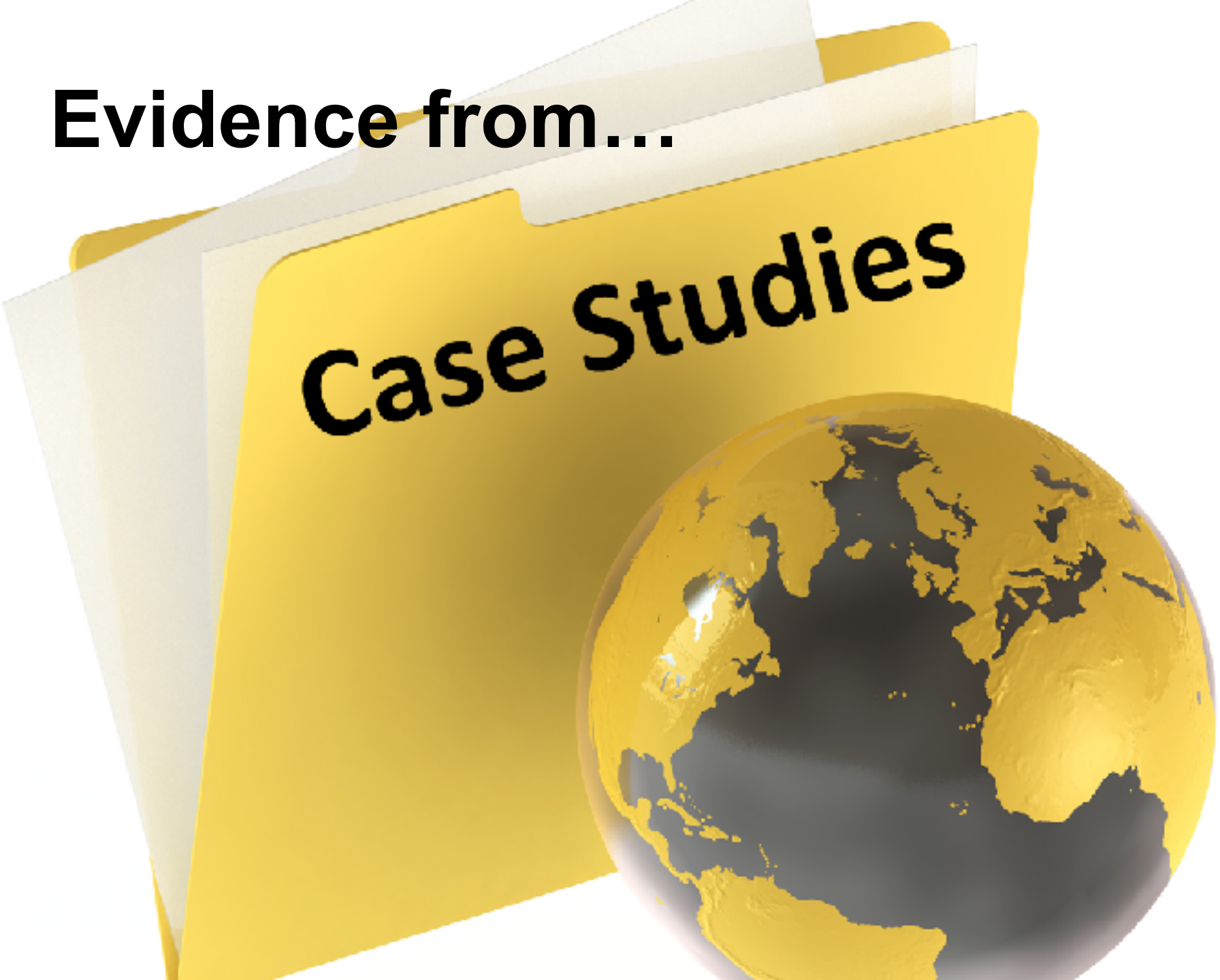


Evidence and theory from cognitive science about learning: how our brains acquire, make sense of and use information

Education Effectiveness Research

wiseGEEK

Evidence from…



How might we move forward?

- Review the best existing evidence about what excellent teaching looks like
- Review existing frameworks / protocols / evaluation instruments for identifying excellent teaching
- Develop/collect some self-assessment + feedback + discussion tools to allow teachers to assess and develop their skills/knowledge/practice in a range of dimensions
- Evaluate the impact (on a range of valued outcomes) of using them

Source: Durham University

The Ladder of Inference

I take actions

I adopt beliefs

I draw conclusions

I make assumptions

I add meaning

Reflective Loop

I select what to pay attention to

Observable data

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Evidence-based decision

Evidence-based practice:

- Focuses on the decision making process
- Thinks in terms of probability (instead of golden bullets).

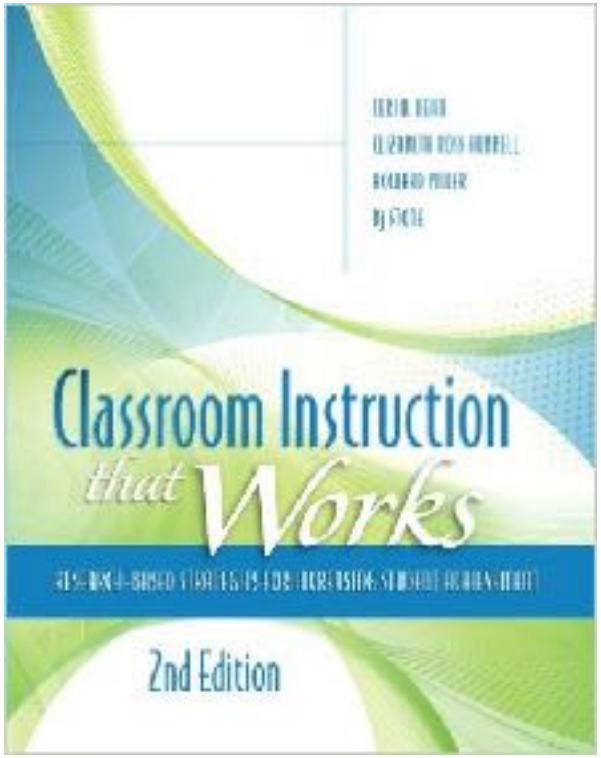
Education is a fad-ridden profession

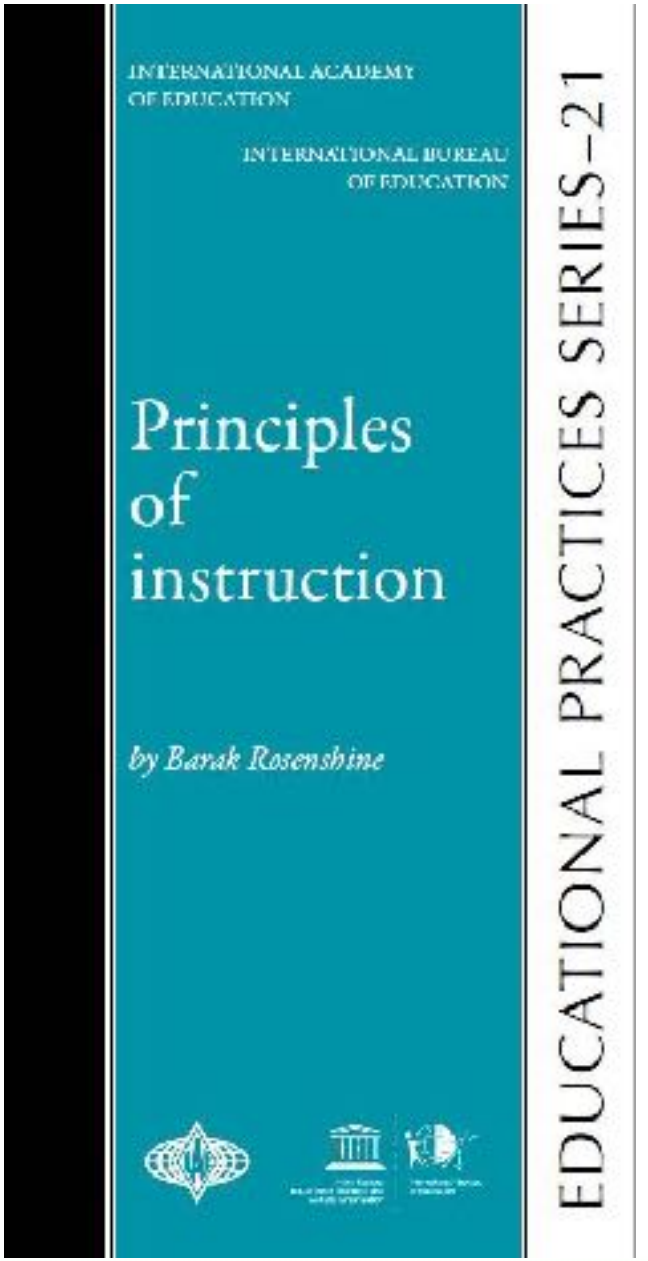
- We mistake opinion for fact
- Something written in a professional journal may be research but often is just opinions of the author
- Theories are just that - one has to do the research to prove or disprove a theory

Fads - jump from Level 1 right into mainstream acceptance

Examples

- Theory of Multiple Intelligences
- Integrated curriculum
- Block scheduling
- Piaget
- Learning styles





Education
Endowment
Foundation

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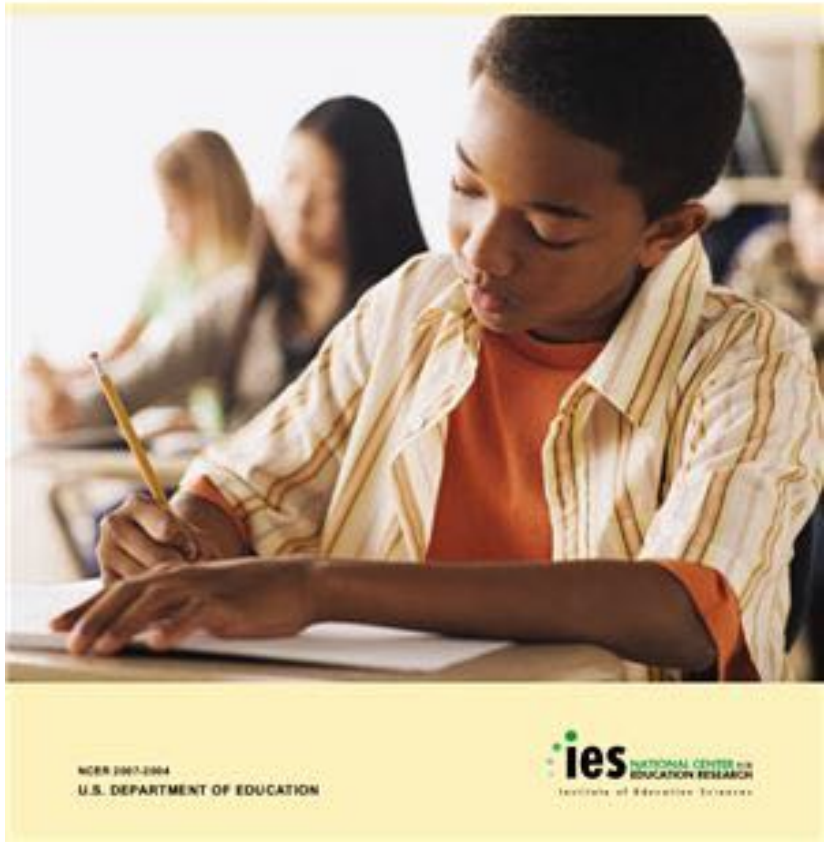

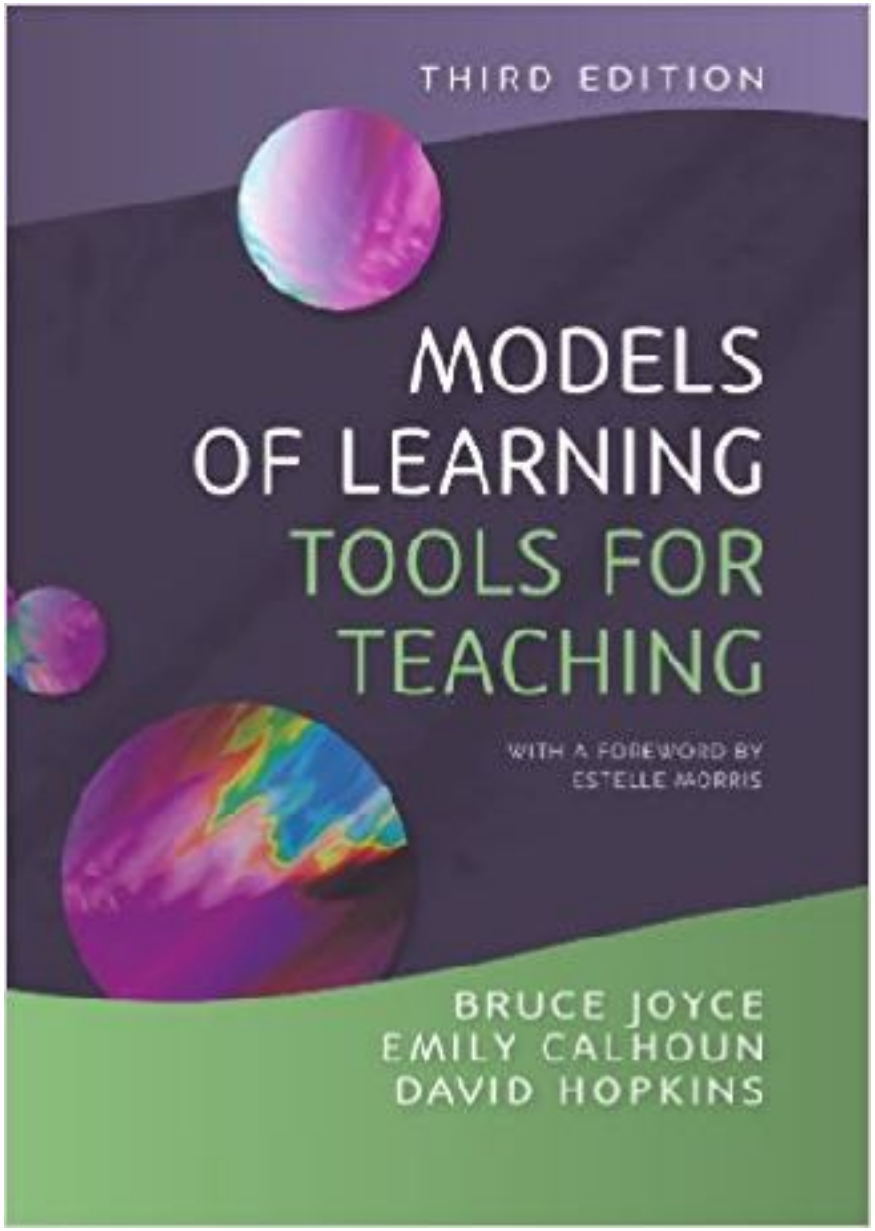

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Hattie's top classroom methods

1. Acceleration
2. Behaviour
3. Reciprocal teaching
4. Feedback
5. Spaced practice
6. Metacognitive strategies
7. Vocabulary programmes
8. Repeated reading
9. Creativity programmes
10. Self-verbalisation
11. Problem-solving
12. Not labelling students
13. Phonics
14. Cooperative learning
15. Direct instruction
16. Tactile stimulation
17. Comprehension

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Marzano/ Dean top classroom methods

1. Similes and analogies; similarities and differences
2. Note-making and summarizing
3. Growth mindset
4. Repetition (practice)
5. Graphical methods
6. Cooperative learning
7. Goals; Feedback
8. Hypothesis testing
9. Prior knowledge; advance organisers

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EEF top classroom methods

1. Feedback
2. Metacognition
3. Peer tutoring
4. Early years intervention
5. One to one tuition
6. Homework (secondary school)
7. Collaborative learning
8. Oral language intervention
9. Mastery learning
10. Phonics
11. Small group tuition
12. Behaviour interventions

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IAE principles (our simplified version)

1. Review previous learning
2. Present new material using small steps
3. Ask questions
4. Provide models
5. Guide student practice
6. Check for understanding
7. Use high pass levels
8. Scaffold for difficult tasks
9. Independent practice
10. Weekly and monthly reviews.

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IES principles (our simplified version)

1. Space learning over time.
2. Interweave worked example solutions and problem-solving exercises.
3. Combine graphics with verbal descriptions.
4. Connect and integrate abstract and concrete representations of concepts.
5. Use quizzing to promote learning.
6. Help students allocate study time efficiently.
7. Teach students to identify content that needs further study.
8. Help students build explanations by asking and answering deep questions.

Filter results by keywords

Cost

Evidence

+1

Months Impact

Reset

Early years intervention

Moderate impact for very high cost, based on extensive evidence.

+5

Extending school time

Low impact for moderate cost, based on moderate evidence.

+2

Feedback

High impact for very low cost, based on moderate evidence.

+8

Homework (Primary)

Low impact for very low cost, based on limited evidence.

+2

Homework (Secondary)

Moderate impact for very low cost, based on moderate evidence.

+5

Individualised instruction

Moderate impact for very low cost, based on moderate evidence.

+3

Learning styles

Low impact for very low cost, based on limited evidence.

+2

Filter results by keywords

Cost

Evidence

+1

Months Impact

Reset

Mastery learning

Moderate impact for very low cost, based on moderate evidence.

+5

Mentoring

Low impact for moderate cost, based on moderate evidence.

+1

Meta-cognition and self-regulation

High impact for very low cost, based on extensive evidence.

+8

One to one tuition

Moderate impact for high cost, based on extensive evidence.

+5

Oral language interventions

Moderate impact for very low cost, based on extensive evidence.

+5

Outdoor adventure learning

Moderate impact for moderate cost, based on moderate evidence.

+4

Parental involvement

Moderate impact for moderate cost, based on moderate evidence.

+3

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Filter Toolkit

Filter results by keywords

Cost

Evidence

+1

Months Impact

Reset

Toolkit Strand | Cost | Evidence Strength | Months Impact

Arts participation

Low impact for low cost, based on moderate evidence.

+2

Aspiration interventions

Very low or no impact for moderate cost, based on very limited evidence.

0

Behaviour interventions

Moderate impact for moderate cost, based on extensive evidence.

+3

Block scheduling

Very low or no impact for very low cost, based on limited evidence.

0

Built environment

Very low or no impact for low cost, based on very limited evidence.

0

Collaborative learning

Moderate impact for very low cost, based on extensive evidence.

+5

Digital technology

Moderate impact for moderate cost, based on extensive evidence.

+4

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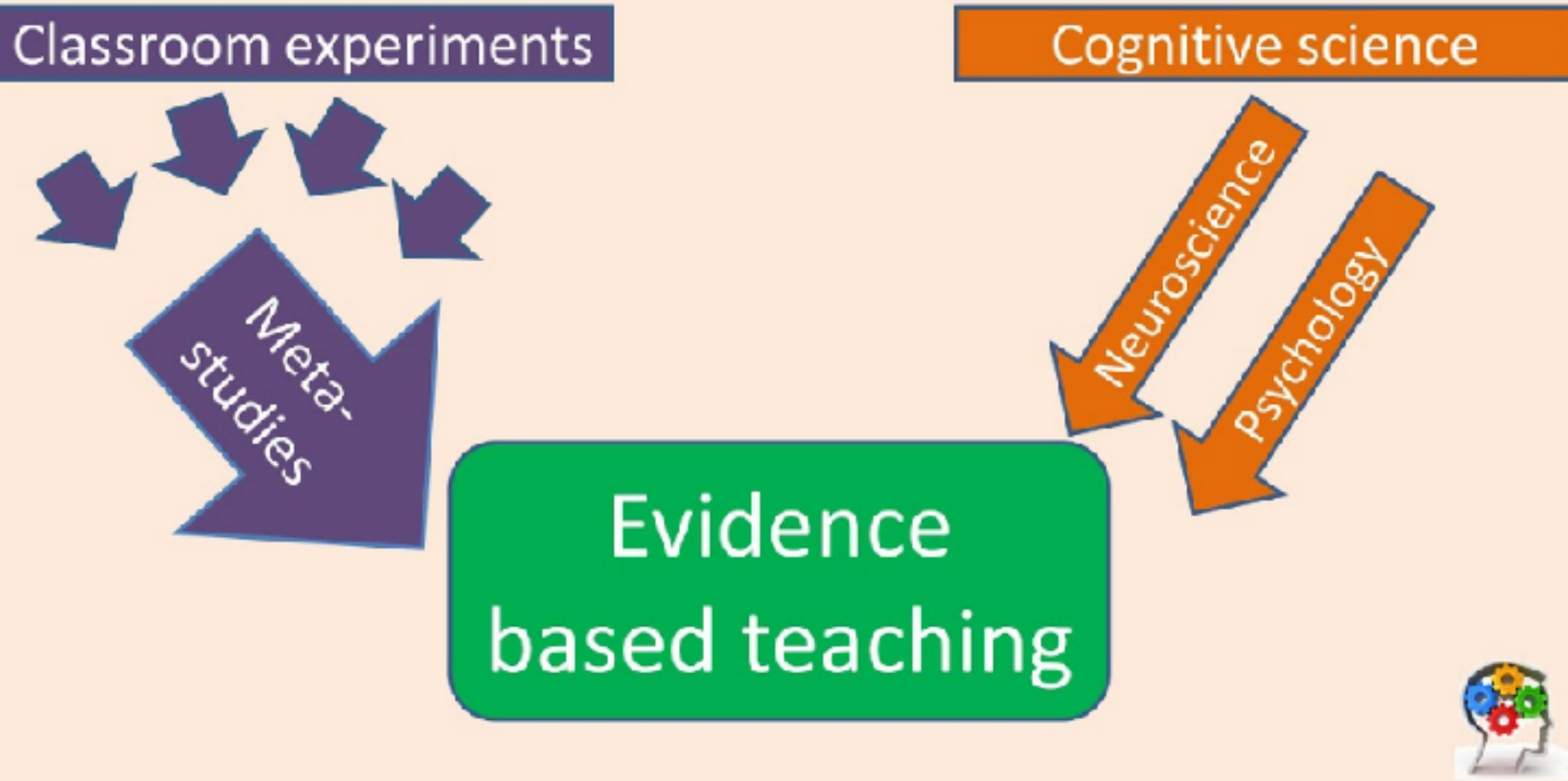
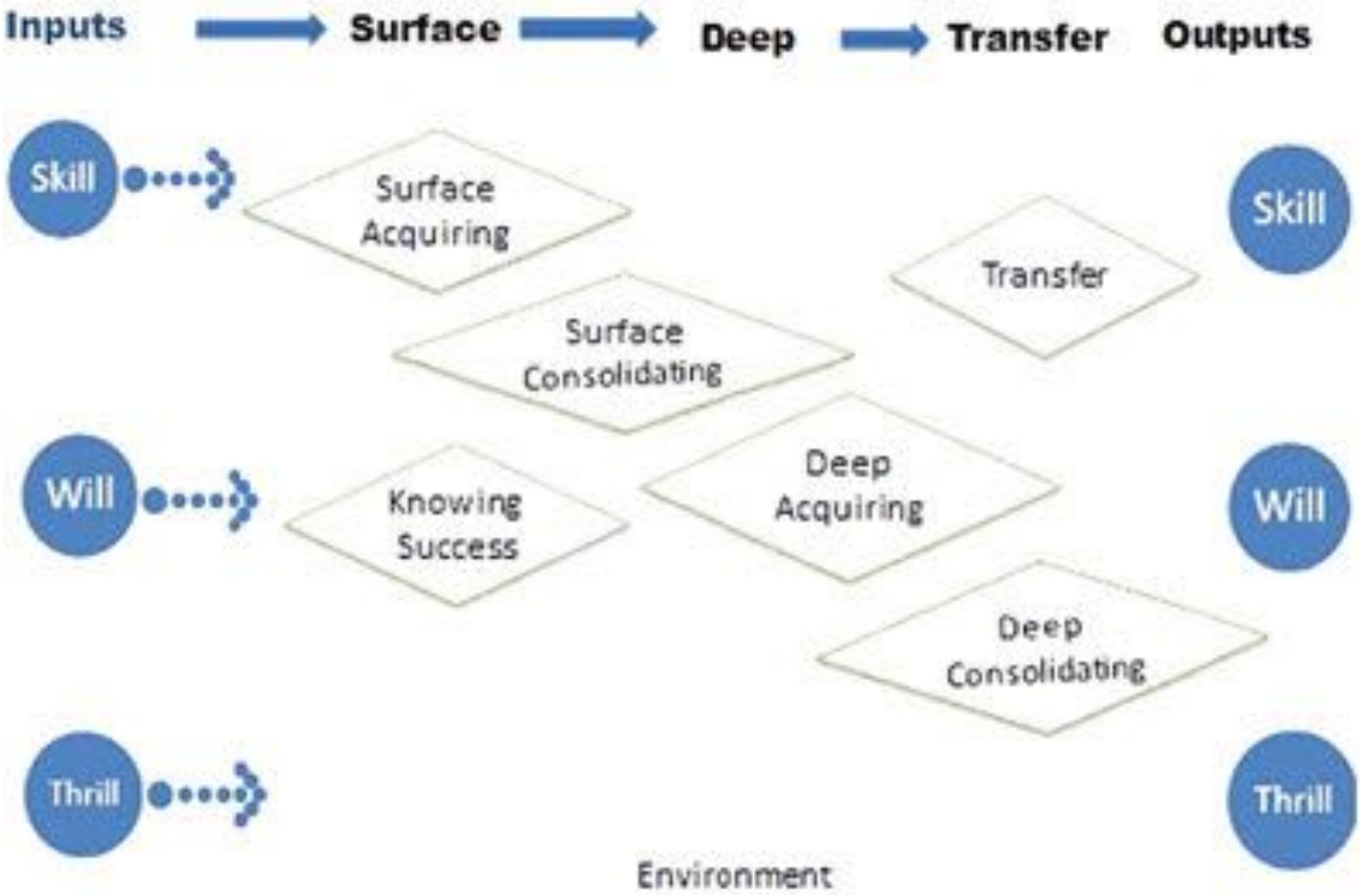
Hattie	Marzano	EEF

One Approach to Evidence



A Model of Learning



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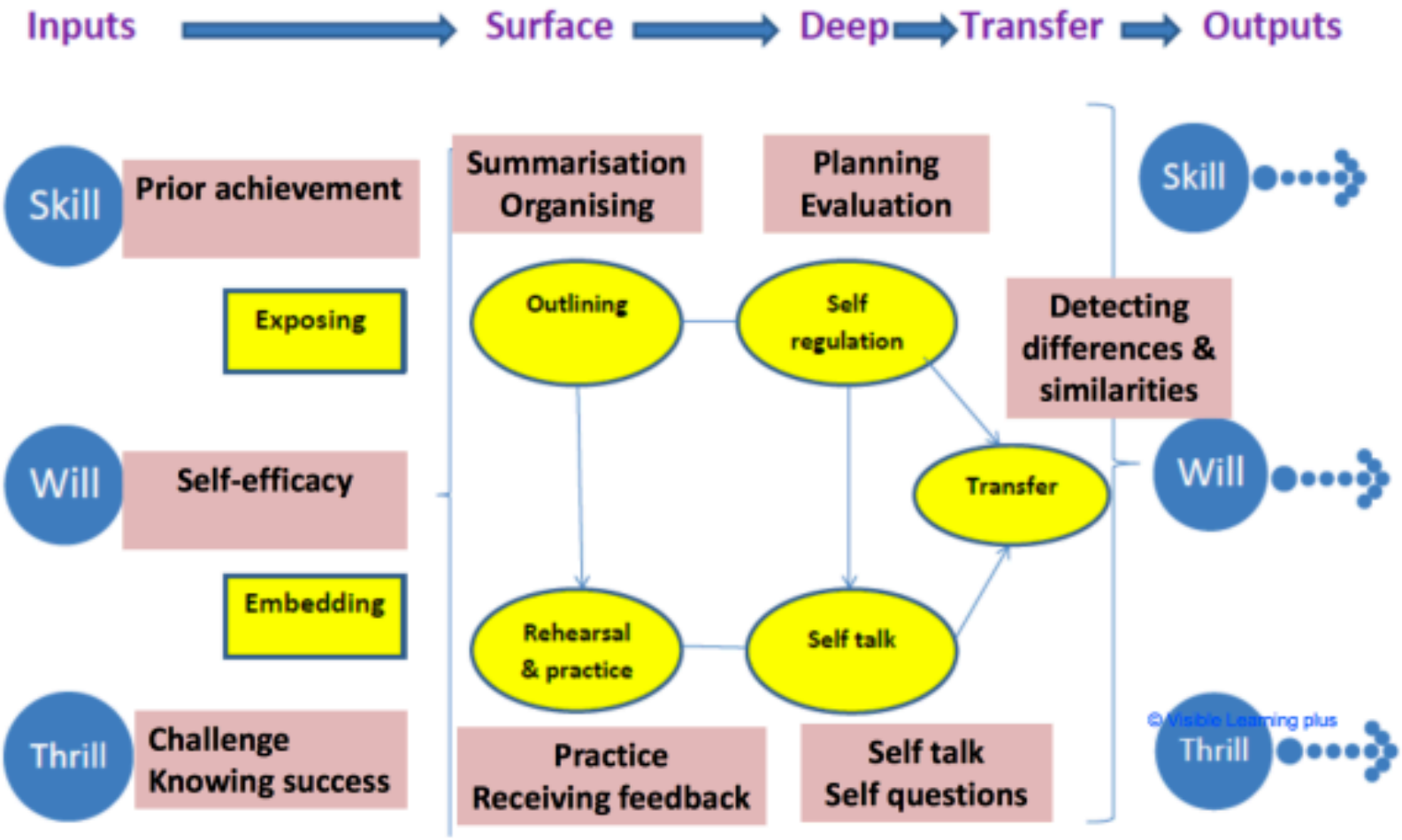
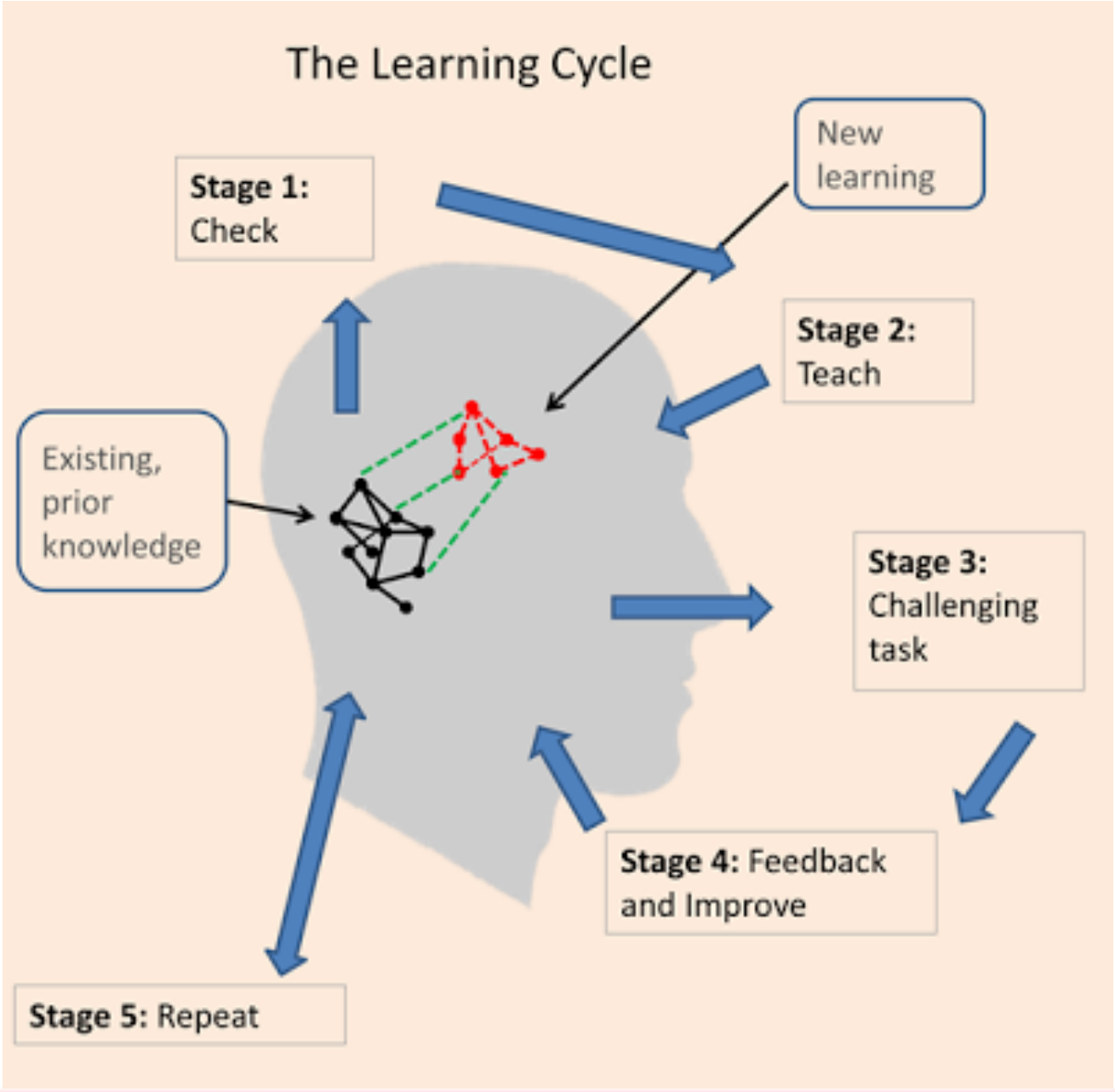


Source: Hattie-A Model of Learning

Unconscious Competence
Unconscious Incompetence
Conscious Competence
Conscious Incompetence


The Learning Cycle
New learning
Stage 1: Check
Stage 2: Teach
Existing, prior knowledge
Stage 3: Challenging task
Stage 4: Feedback and Improve
Stage 5: Repeat

		Hattie	EEF	Marzano	IAE	IES
Step 0: Set the scene	Behaviour	✔	✔			
	Mindset			✔		
Step 1: Activate prior knowledge	Assess prior knowledge			✔	✔	✔
	Fill missing knowledge					
Step 2: Present new material	Link to prior knowledge	✔		✔		
	Link abstract to concrete					✔
	Working memory limit				✔	
	Advance organisers			✔		
	Use graphics/ non-linguistic			✔		✔
Step 3: Set a challenging task	Challenge					
	Modelled/ worked examples	✔			✔	✔
	Metacognition	✔	✔			
	Collaborative		✔			
Step 4: Provide feedback	Feedback	✔	✔	✔	✔	
	Questioning		✔		✔	✔
Step 5: Repeat and reassess	Spaced repetition	✔			✔	✔
	Interweaved practice					✔
	Deliberate practice		✔	✔	✔	
	Progress check				✔	
	High pass level/ mastery	✔	✔		✔	

Visible Thinking

Prompt Picker

*Visible Thinking is a flexible instructional framework which simultaneously develops cognitive and non-cognitive skills. Thinking routines are simple patterns of conversation for exploring ideas. As student thinking is made visible, to themselves and their peers, opportunities for growth abound.

These concepts and routines have been compiled and adapted from the Visible Thinking website: www.visiblethinkingpz.org
Graphics and modifications by Tracy Clark www.tracyclarkart.com

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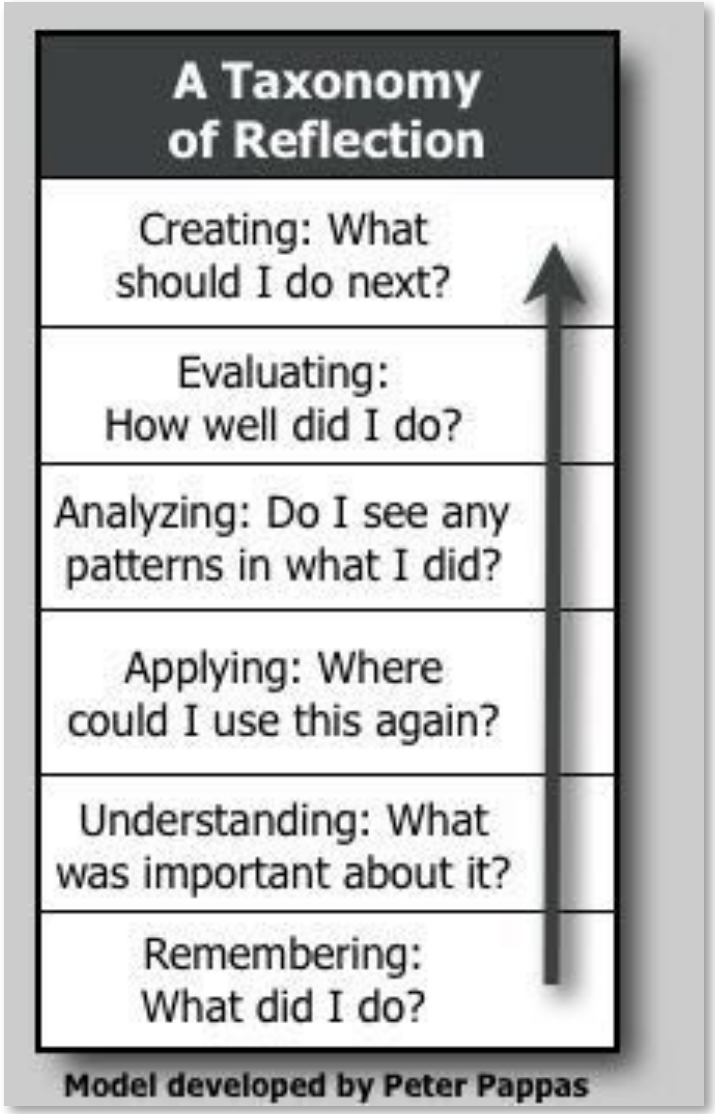

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Dimensions of great teaching

1. (Pedagogical) content knowledge
2. Behaviour / control / classroom management
3. Classroom climate / relationships / expectations
4. Quality of instruction
5. Wider professional elements: collegiality, development, relationships
6. **Research knowledge**

Source: Durham University

How research might help

- Research knowledge
  - Informs pedagogical practice
  - Informs decisions about strategy and policies
  - Informs attempts to implement and embed more effective practices
- Research mindset
  - Robustly evaluates ongoing performance on a range of outcomes
  - Evaluates the impact of any changes made
  - Adopts a critical perspective: ‘show me the evidence’

Source: Durham University

What we need to do

- Encourage our teachers to use curriculum and instruction that have evidence to support their use
- Discourage teachers from picking and choosing based on their personal preference
- Grossen, “To be a profession is to have a professional-knowledge base comprised of shared procedures that work.”