

**TEACHING MATTERS**  
SCIENCE OF LEARNING  
NATIONAL SUMMIT

The importance of Explicit and Direct Instruction

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Dr Lorraine Hammond AM CF




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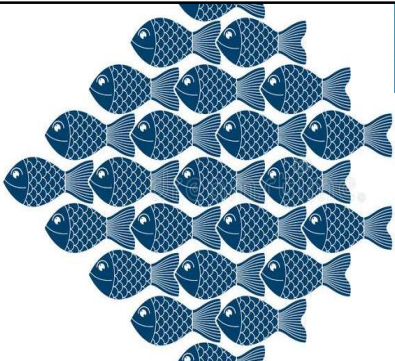
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GO YOUR OWN WAY



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## The why, the what and the how of DI & EI

### Why?

- *Explain* the relationship between working memory, long term memory, automaticity and learning.

### What?

- *Differentiate* between the terms Explicit Instruction, Explicit Direct Instruction, direct instruction and Direct Instruction

### How?

- *Identify* the salient features and purpose of Daily Review

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## You can't love them to learning

"Good teaching is not a kind of magic performance."



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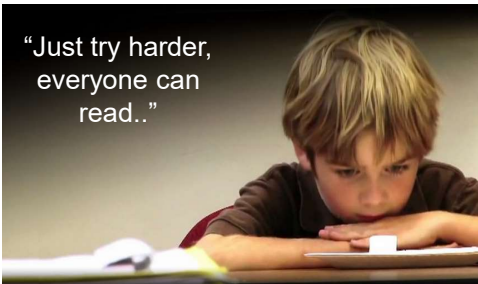
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"Just try harder, everyone can read.."



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## Ideological Alignment



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CTE & W  
**KNITS** CHESTNUT 37 - 44 6D



They were often a target for unkind remarks

DI is the ugly duckling of education, despised and defamed despite repeated demonstrations that it works. No other educational reform strays further from accepted theory, differs more from accepted practice or draws such brutal slander for its achievements (Barbash, 2012, p. 38).

Barbash, S. (2012). *Clear teaching: With direct instruction, Siegfried Engelmann discovered a better way of teaching.* Education Consumers Foundation. [http://education-consumers.org/pdf/CT\\_111811.pdf](http://education-consumers.org/pdf/CT_111811.pdf)

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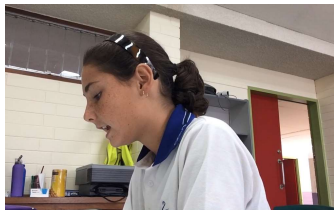
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### PART III

Hurn was sleeping when it happened. Hurn didn't hear the big cat sneak into the cave that Hurn called his home. Suddenly Hurn was awake. Something told him, "Beware!" His eyes turned to the darkness near the mouth of the cave. Hurn felt the fur on the back of his neck stand up. His nose, like noses of all wolves, was very keen. It made him very happy when it smelled something good. But now it smelled something that made him afraid.

Hurn was five months old. He had never seen a big cat. He had seen clover and ferns and grass. He had even eaten rabbits. Hurn's mother had come back with them after she had been out hunting. She had always come back. And Hurn had always been glad to see her. But now she was not in the cave. Hurn's sister, Surt, was the only happy smell that reached Hurn's nose.

Pre (Start of Term 1, Yr 7)  
Post (End of Term 4, Yr 7)



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Lesson 26  
SOUND-ATTACK SKILLS

Board Work

EXERCISE 1

INTERNAL VOWEL CONSONANTS: No. 14

1. Write in a column (or the board):

hear  
leaf  
boat  
nest

2. Point to each letter. What sound?  
3. Repeat for each word.

4. Repeat to hear. Repeat. What sound?  
5. Repeat for each word.

6. Repeat steps 2 & 4 with 100.

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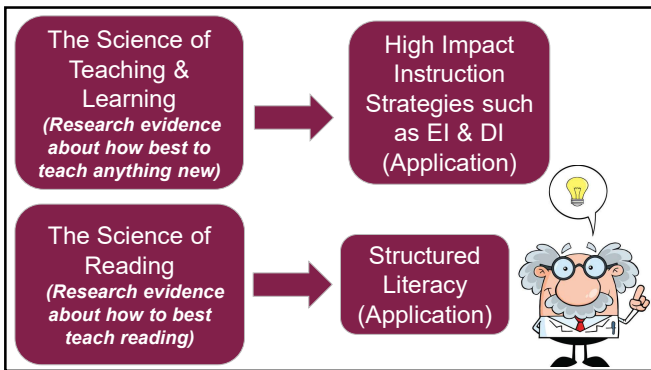
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DI, EDI, EI, di?

**Explicit Instruction** is unscripted and comes from the work of Dr Barak Rosenshine.

Explicit Instruction, Explicit Direct Instruction (EDI) and direct instruction (di or 'little di') are terms used to describe Explicit Instruction.

**Direct Instruction** is scripted and comes from the work of Siegfried Engelmann.

Direct Instruction (DI or big DI) is the term used to describe commercial materials such as *Spelling Mastery* written by Engelmann and published by Scientific Research Associates (SRA). DI also includes *Let's Decode*, *Elementary Maths Mastery* and *Junior Elementary Maths Mastery*.

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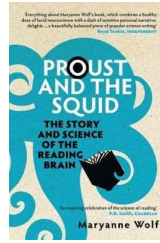
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## Why the need for fluency?

“It’s not drill and kill, it’s giving children multiple exposures to build the visual word form area.”

Professor Maryanne Wolf (2019)



Wolf, M. (2007). Proust and the squid: The story and science of the reading brain. Harper Collins Publishers.

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TEACHING THE BRAIN TO READ

BRAIN AREAS AND READING SKILLS

“The visual word form area begins to appear in the brain scans of non-readers after as little as five hours of training in decoding” (Brem et al, 2010).

Brem, S., Bach, S., Kucian, K., Kujala, J. V., Guttorm, T. K., Martin, E., ... & Richardson, U. (2010). Brain sensitivity to print emerges when children learn letter-speech sound correspondences. *Proceedings of the National Academy of Sciences*, 107(17), 7939-7944.

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## My (mis)education

- ‘Whack a mole’
- Brain Gym
- Learning styles (auditory, visual, kinaesthetic)
- “Your job is not to teach reading”



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Big Idea: How we teach matters

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### Assumptions

- There is a gap between research and practice in schools and this varies between states and schools.
- Teachers want the best for their students, but sometimes they don't have the right tools.
- Instructional change is hard, even if teachers have the will to change.

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### Why the instructional approach we choose matters...

44% of Australian Adults lack the literacy skills required for everyday life.	20% of Australian students are deficient in vocabulary on entering school.	7.3 million Australians have below-proficiency level literacy.
21% of Australian children aged 15 are functioning at the minimum baseline proficiency level.	1 in 3 Australian children have literacy skills low enough to be vulnerable to unemployment & Social Exclusion.	1 million Australian children have a low reading ability yet only 20% of these have an actual learning disability.
1 in 4 Australian children are at risk of reading failure.	54% of new primary school teachers could not teach reading to a reasonable level.	

<https://www.readingropes.com.au/why-reading-ropes/>

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**Five times** as many individuals have reading difficulties than the 3-5% suggested by researchers



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## Big Idea: What is Explicit Instruction?

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## What is Explicit Instruction?

"The terms *explicit teaching* or *direct instruction* are summary terms for recent findings on effective teaching. They refer to a systematic method of teaching with emphasis on proceeding in small steps, checking for students understanding and achieving active and successful participation by all students" (p. 34).



Rosenshine, B. (1987). Explicit teaching and teacher training. *Journal of Teacher Education*, 38(3), 34-36.

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## Does Explicit Instruction work?

"The effectiveness of explicit instruction is supported by the existence of a large volume of convergent research, conducted over almost five decades, and emanating from a variety of disciplines and theories." (Hughes et al, 2017, p. 6)



Hughes, C. A., Morris, J. R., Therrien, W. J., & Benson, S. K. (2017). Explicit instruction: Historical and contemporary contexts. *Learning Disabilities Research & Practice, 32*(3), 140-148. <https://doi.org/10.1111/ldrp.12142>

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## Does Explicit Instruction work?

Tried and tested  
Teaching practices that make a difference



For this guide, AERO synthesised the most rigorous and relevant evidence-based practices from meta-analyses, systematic reviews and literature reviews.

AERO has rated these sources of information against its Standards of evidence, focusing on evidence generated in an Australian context where possible.

### Explicit instruction

Know how to teach your students

Australian Professional Standards for Teachers | Focus Area 3.3: Use teaching strategies

"Instruction that is explicit involves fully explaining and effectively demonstrating what students need to learn. ***This approach to instruction accords with what we know about how the human brain works (i.e. that learning happens most efficiently when teaching is clear, systematic and does not leave students to construct or discover information without any guidance).***" (p. 1)

<https://www.edresearch.edu.au/sites/default/files/2021-03/AERO-Tried-and-tested-guide-Explicit-instruction.pdf>

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## What about high SEI schools?

**Sent:** Thursday, 30 March 2023 11:24 PM  
**To:** Lorraine HAMMOND <l.hammond@ecu.edu.au>  
**Subject:** Daily Review – wow!


Hi Lorraine

I'm sorry to email you at night BUT I just had to share. This term I have really refined my phonics teaching and really tightened up my daily reviews for reading and spelling. I used all I have learned from you Lorraine, stuck to the same slides, only changed the code so essentially reducing cognitive load, continued to use your sequence. Today I have just reassessed my guys.

I have a little one who only got 6 out of 26 at the beginning of the year and now is 23/26!!!! 88% mastery for stage 1. This is unheard of. At this time of the year, these results remind me of why I bust myself each day in hope of progress for these little people!!!

I now have the majority of my Foundation students operating at Yr 2 standard which I didn't think was possible when I got them

Edell



ST JAMES' ANGLICAN SCHOOL

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Big Idea: What is Daily Review?

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Why do we 'Daily Review'?

Short-term memory Long-term memory

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Daily Review reduces Cognitive Load and builds Automaticity

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## Long Term Memory

Information in long-term memory does not burden working memory. Automaticity of facts and procedures frees working memory for more complex tasks.

**Long-term memory**  
Effectively limitless

**Working Memory**  
constrained

**Daily Review builds automaticity and reduces the load on Working Memory**

Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive science*, 12(2), 257-285.

TEACHING MATTERS REVIEWS OF LEARNING METACOGNITIVE SCIENCE

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## THE PRINCIPLES OF INSTRUCTION

TAKEN FROM THE INTERNATIONAL ACADEMY OF EDUCATION

**01 DAILY REVIEW**

MO TU WE TH FR

Daily review is an important component of instruction. It helps strengthen the connections of the material learned. Automatic recall frees working memory for problem solving and creativity.

**10 WEEKLY & MONTHLY REVIEW**

WEEK WEEK WEEK WEEK WEEK WEEK WEEK WEEK

The effort involved in recalling recently-learned material embeds it in long-term memory. And the more this happens, the easier it is to connect new material to such prior knowledge.

Rosenshine, B. (2012). Principles of Instruction: Research-based strategies that all teachers should know. *The Education Digest*, 78(3), 30-40.

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**DAILY REVIEW**

Creating Academic STUDENT ENGAGEMENT

- Pronounce With Me**
- Track With Me**
- Read With Me**
- Gesture With Me**
- Pair-Share**  
A → B, B → A
- Attention Signal**  
Eyes Front, Back Straight
- Whiteboards**  
Chin-it
- Complete Sentences**  
Public Voice, Academic Vocabulary

**LESSON DELIVERY**

Verify students are learning while you're teaching!

**T** Teach First  
Write and ask the question to students in response to response.

**A** Ask a Question  
Write to elicit student response.

**P** Pair-Share  
Ask students to discuss, practice their response to the question.

**P** Pick a Non-Volunteer  
Randomly to verify that everyone is learning.

**L** Listen  
In student response to the question and take instructional decisions.

**E** Effective Feedback  
Effective response is based on student response.

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For older students: say, syllables, segment into phonemes to spell...

Teacher: What do we do?  
Students: We listen to the word. (\*gesture to ear\*)  
Teacher: What's the word?  
Students: **\*Insert word here\*** (E.g. incessant)  
Teacher: What do we do?  
Student: We say the word. (\*gesture mouth talking with hand\*)  
Teacher: What's the word?  
Students: **\*Insert word here\*** (E.g. incessant)  
Teacher: What do we do?  
Students: We break it into parts. (\*gesture to 'chopping' with hands\*)  
Teacher: How many parts?  
Students: in/cess/ant – 3  
Teacher: How many sounds?  
Students: i-n-c-e-ss-a-n-t – 8  
Teacher then moves onto reading the definition...



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Big Idea: You can't love them to learning

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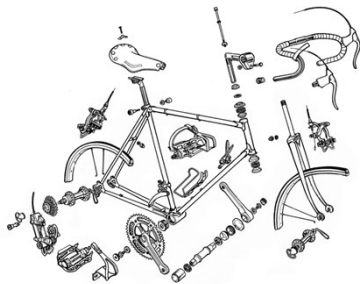
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The whole is greater than the sum of the parts



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## What goes into a Daily Review?



Your job is to periodically interrupt your students' forgetting process

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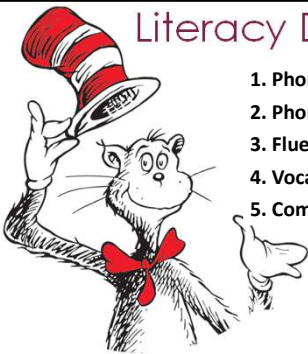
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## Literacy Daily Review



1. Phonological Awareness
2. Phonics (for reading and spelling)
3. Fluency
4. Vocabulary
5. Comprehension



- TAPPLE
- Engagement Norms
- Pace

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## Numeracy Daily Review



- Number
- Algorithms
- Times tables
- Space
- Shapes
- mm-cm-m-km
- Time
- Formula
- Money
- Decimals-%-fractions
- Place value
- Etc



- TAPPLE
- Engagement Norms
- Pace

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