Teaching and learning · One-pager

How learning really happens.

Much of what makes teaching work happens out of sight, in how memory and attention behave. These six findings from cognitive science come from Dr Carl Hendrick's webinar The Science of Learning meets Direct Instruction. Each comes with what it asks of us in the classroom.

1 Working memory tires quickly

We can hold only a handful of new items in mind at once, and not for long. Chunk information, and lean on what students already know so that fresh material has somewhere to land.

2 Retrieval is learning

Pulling knowledge back out of memory strengthens it, so a quiz is a way to learn as well as a way to check. Build in frequent, low-stakes quizzing.

3 Memory is reconstructive

We do not store memories intact and replay them. Each time we recall an idea, we rebuild it from what we already understand. Students who know more rebuild new ideas more fully and more accurately.

4 Knowledge underpins thinking

Critical and creative thinking rest on knowing things. You cannot connect dots that are not there. Careful curriculum sequencing matters, because new learning is built on what came before.

5 Achievement drives motivation

Motivation and success feed one another, and often it is success that comes first. Well-structured teaching can plan for early success, and small successes build confidence, interest and persistence over time.

6 Learning is not performance

What a student can do today is a poor guide to what they have learned for good. Aim for knowledge that endures. A degree of difficulty, chosen well, makes learning more durable and more flexible.

> **"Effective teaching is not about painting by numbers; it's a nuanced, expert response informed by deep understanding of how learning truly happens."**
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> Dr Carl Hendrick, The Science of Learning meets Direct Instruction, webinar, 13 May 2025