SCIENCE OF LEARNING: TEACHER ACTION OVERVIEW

Drawing Attention to Meaning

Deans for Impact

This resource from DFI's Learning by Scientific Design Network provides practicing teacher-educators with an overview of a learning science-informed teacher action. To access additional materials, visit deansforimpact.org/resources

Teachers' questions and tasks focus student attention on the meaning of content.

The Model of the Mind

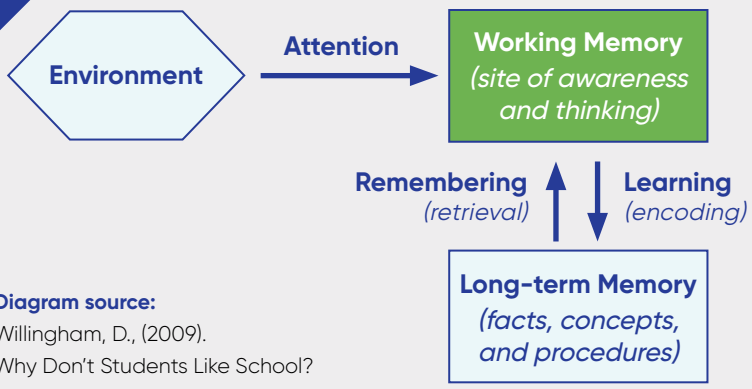


Diagram source:
Willingham, D., (2009).
Why Don't Students Like School?

We can only learn what we first pay attention to, and our attention is finite.

Teachers should focus student attention on the most important content of the lesson. This means aligning each part of a lesson to the big idea so students see the thruline clearly.

You might have heard this referred to as "backwards planning with the end in mind", or aligning instructional goals to tasks.

Why does attention to meaning matter for students?

All students miss out when they waste instructional time thinking about less relevant material, and the tasks teachers ask of students directly reflect what they think they are capable of. Not all students receive lessons aligned to grade-level learning goals. These **missed grade-level learning opportunities compound over time** and create variability in students' ability to learn and achieve high-performing outcomes. Students who were prompted to think about grade-level content are able to build on their knowledge when they hit more advanced topics, while their peers who were denied those opportunities struggle.

What does this look like in the classroom?

Learning Goal

The lesson has a clear, achievable, grade-level learning goal.

High-quality learning goals break grade-level standards into manageable pieces and focus both teacher and student on the core content of the lesson.

Alignment

Each activity in the lesson focuses student attention on the most important content.

Instructional time is limited, so each section of a lesson should direct thinking to the knowledge and skills needed to achieve the learning goal and not something else.

All Learners

All learners, not just a subset, are thinking about the meaning of content aligned to the learning goal.

Assigning some students lower-level work (often a misguided attempt to "differentiate" for students) denies a subset of students essential learning opportunities.

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Common pitfalls novice teachers fall into

Activity Driven Planning

Instruction focused on engagement alone, through "fun formats" like games, centers, or group work, rather than designed to serve the learning goal.

- ***Might look like:*** Students in a lesson about how fish are adapted to saltwater habitats make paper maché fish for most of the class. They are thinking mostly about how to paste newspaper or how to make a fin.
- ***Try instead:*** Students might draw a saltwater fish, but they spend most of class time writing or explaining how their fish is adapted to particular features in its regional habitat.

Differentiation Overload

Differentiation based on learning styles myth, or in a way that struggling students don't experience meaningful learning aligned to the objective.

- ***Might look like:*** Giving "visual learners" a station of info cards about saltwater fish habitats while "kinesthetic learners" move labeled blocks of different fish into categories based on habitat. Students who are emergent readers color pictures of each fish to reduce reading demands.
- ***Try instead:*** Because we know learning styles are a myth, all students should encounter multiple modalities of learning about the fish and their habitats, and emergent readers might have scaffolds (like chunking grade-level text into shorter sections with discussion pauses) to support them in doing the grade-level work.

Unambitious Content

Instruction may be content-focused but inappropriate for grade-level, so students miss opportunities to build knowledge and skills that future grade levels build upon.

- ***Might look like:*** Students bullet out facts about various saltwater fish but are never asked to synthesize learning and are graded on the number of facts they write down.
- ***Try instead:*** Students must evaluate and select the three most important adaptation facts about three different fish and compare and contrast them to arrive at common adaptations for saltwater fish.

Mile Wide, Inch Deep Content

Instruction attempts too many objectives for a single lesson, resulting in shallow or superficial learning. Students are confused on where to focus.

- ***Might look like:*** A single lesson focuses on saltwater and freshwater habitats and many types of fish in each, even though students are learning about each habitat for the first time.
- ***Try instead:*** The lesson focuses on only key features of saltwater habitats, with three different fish and their adaptations as a focus for comparing and contrasting.

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