

The Science of Reading (2025) by Doug Lemov, Colleen Driggs, Erica Woolway

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Content	Do This/Remember This
<p>Introduction: This is about reading after phonics – what the research says translated to the classroom. Book built on 7 core arguments – attention/fluency/background knowledge (BK) /vocab/writing/books/complex text.</p>	<ul style="list-style-type: none"> •
<p>Ch 1: The Science of Reading in 7 Key Arguments. 1. Building attention: = necessary in effective reading instruction/affects reading speed, prosody, word recognition comprehension (comp)/reading biologically secondary/brains are plastic/cell phones rewire brains. 2. Fluency: = prerequisite to reading comp at all grade levels/= ability to read at the speed of sight/ = accuracy at speed + automaticity + prosody (appropriate expression + intonation + phrasing)/determines half of comp/issue in older students (Ss) too. 3. Background knowledge: = most important driver of comp after fluency/ reading comp not about skills e.g. making inferences/ability to infer function of prior K/makes for deeper thinking. 4. Vocabulary: = single most important form of K (not a skill)/ strong correlation: vocab→ comp/causation harder to establish/vocab hard to measure/subset of BK/speech has fewer rare words than books/'language is the mother not the handmaiden of thought'. 5. Intentional writing development: get better at writing = get better at reading/sentence construction skills needs to be taught not just assigned. 6. Books = optimal text format for building understanding and comp/ we learn especially well from stories/historically important/Ss find books hard; struggle is beneficial. 7. Reading complex texts = gatekeeper to long term success/college readiness link to performance on complex texts/'complex' hard to measure. T must know: cognitive load theory, working memory (WM) easily overloaded by complex tasks/learning is a change to your long term memory (LTM) /processing + meaning = stronger assimilation into LTM/generation effect = you remember more if you generate it/transient information effect = explanatory information disappearing before it can be processed = inferior learning/encoding = transferring ideas from WM to LTM / retrieval means getting it back/curse of the expert = easy to forget how you got there/easier to be curious about things you have K about/Nintendo effect = success breeds motivation.</p>	<ul style="list-style-type: none"> •
<p>Ch 2: Attending to Attention: Smartphones have implications for reading/Reading has declined significantly – 13yo: 31% hardly read, 14% read every day, linked to smartphone use. Less reading + shallow reading. They may only read books that you assign. Neuroplasticity = brains have been rewired for shorter attention span (neurons that fire together wire together)/TL:DR now common. Rewiring can be reversed by:</p> <ol style="list-style-type: none"> 1. Teacher Read Aloud (TRA) = exposed to more /harder (syntactically)/richer text faster) 2. FluentAccountableSocialExpressive (FASE) = T+S reading together with prosody 3. AccountableIndependentReading (AIR) = silent reading + annotation/books in hard copy not laptops, research clear on benefits / directed + non-directed annotation helps /skills driven objectives= putting cart before the horse, plan for book driven objectives. 	<ul style="list-style-type: none"> •
<p>Ch 3: Fluency and Ways of Reading: Fluency = accuracy + automaticity + prosody = critical for comp. Fluency: developed via TRA/FASE/AIR, improved when Ss hear/ read/ reread text aloud, expressive oral reading →expressive silent reading → better readers. Repeated reading = 'most evidence-based fluency intervention': T read, Ss follow text, then Ss reread silently/paired/whole class together. Lack of fluency →overloaded WM →weaker comprehension. 1. Orthographic mapping (OM) = words stored (meaningfully) in LTM essential for fluency, needs practice: rereading/'repeated decoding' improves all 3 parts of fluency. 2. Strategies: TRA↔FASE↔AIR↔TRA incorporates modelling/ gradual release /practice. a. TRA models prosody/builds their mental models/shows your love of reading. b. FASE ≠ round robin, all should be prepared to read, intentionally assign but don't say how long, reading aloud is driver+ indicator of fluency, strategies: bridge/capture mood/echo/choral response/make mechanics explicit. c. AIR: select text (not complex text, check decoding issues), think about the 'when'.</p>	<ul style="list-style-type: none"> •
<p>Ch 4: The Hidden Power of Background Knowledge: Issues: Standardized tests (US) =skills based/ leads to only reading passages/Ts worry background knowledge (BK) boring/Ts don't have BK/Bloom's taxonomy misleading. Useful BK is organized + connected in LTM. Build knowledge by: 1. Embedding non-fiction (NF): NF text 'in the bull's eye'=directly related to text, 'outside the bull's eye'= unlocks deeper meaning, NF connected to stories easier to remember, timely/topical embedding not all in one go, overlapping questions link fiction/NF. 2. Embellishments (visual/text-based supports) + knowledge feeding (oral supports during reading): both help to embed BK) needed for deep comprehension. 3. Use knowledge organisers (KO): = one page document/high-priority K to store in LTM. 4. Use retrieval practice (RP): = low stakes quizzing, helps activate what they know + encode</p>	<ul style="list-style-type: none"> •

<p>knowledge into LTM, can use with KOs, should be easy but not too easy, use elaboration to apply/use not just recall, blocked practice (useful for early encoding), interleaved practice (useful for effective retrieval from LTM)</p>	
<p>Ch 5: Vocabulary Reconsidered: vocab development 1st on list of factors affecting reading success/ $\frac{1}{2}$ of comp down to vocab (research)/can't rely on 'read a lot'. Teaching vocab: using Context clues inefficient/ineffective/assumes vocab a skill but actually 'micro-K', better to use RP, treat as BK when appropriate (reactivate at start of lesson) 1. Explicit Vocab Instruction (EVI) = plan to introduce a few words* a day, accurate/short definition, give detail of differences, nuances between synonyms, then Active Practice (enables Check for Understanding), but only 360 words a year so... 2. Implicit Vocab Instruction (IVI) = during reading choose words* that: are a barrier to comp/are easy to define/have multiple meanings/ have familiar synonyms/ are in phrases (idioms) that could trip them up. Method = pause, define then: pronounce or Call & Response or draw picture or brief practice. IVI integral to TRA/FASE, easy to meet a LOT of new words, important for older Ss/technical books, go back to words learned before. *Tier 2 words most useful (Tier 1 = everyday, Tier 3 = technical)</p>	<ul style="list-style-type: none"> •
<p>Ch 6: Using Writing to Develop Readers: Writing is slower than speech \rightarrow more thinking time \rightarrow more meaning/precision \rightarrow they remember more from what they read \rightarrow better readers.</p> <p>1. Formative Writing (FW): Ss 'think in writing' ('Quick Write', 'jot' ideas down/write first then discuss/then revise/model this/keep it brief). 2. Developmental Writing (DW): Ss write to 'expand syntactic control' a. Art of the Sentence: prompts scaffold/improve syntax/single sentences! b. Sentence Expansion: give short sentence/prompts to expand or embed.</p> <p>3. Summative Writing: Ss write to support + explain arguments (break essays into skills and practice/use FW/DW to prep/short summative prompts that actually break down/build up using skills from FW/DW). 4. Writing Before Discussion: more value: enables Ss and T to prepare/Ss more confident/richer discussion, more transfer: to LTM from WM. 5. Stamping: , creates manageable chunks for memory from complex narratives/reworking aids memory/ using stamps frees WM. 6. Revising: editing =mechanics \neq revising = meaning making-harder), don't JUST revise essays, more frequent shorter practice (sentences/paras).</p>	<ul style="list-style-type: none"> •
<p>Ch 7: The Power of the Book: [Decline of the book due to: tests content agnostic \rightarrow use of shorter extracts/ passages/student choice/use of videos/S resistance/belief you can teach transferrable critical thinking/reading skills.] More books \rightarrow more knowledge = network effect, accelerates learning.</p> <p>1. Stories are Cognitively Privileged: stories a. treated differently in memory/evolution = made groups close knit \rightarrow increased survival chances/ b. build knowledge + empathy easily as brain treats stories and experiences similarly/easier to remember/ needs to be connected reading/reading together (aloud) enriches connections through shared experience/</p> <p>2. The Medium IS the Message: = the world is complex \rightarrow needs steady focus to understand it, books \rightarrow slow, reflective, deep, and thoughtful = the message, and the thinker.</p> <p>3. Books are Cultural Capital: knowing useful things gives you cultural capital/ provides opportunities/ opens doors, reverse true \rightarrow lack of access is a profound disservice/ excludes people.</p> <p>4. All Books Are Equal But... : a. Choose books that: are truly great/model the craft of meaning making at the highest level/will stay with the Ss forever/enable Ss to talk about ideas from a different time and place/will be relevant in 20 years b. Get them to read outside class with frequent, short, specific, factual, straightforward, open Reading Checks.</p>	<ul style="list-style-type: none"> •
<p>Ch 8: Close Reading: = focused, detail-oriented rereading of short sections in attentionally-privileged setting + chance to encode (via writing/discussion), short (2-3mins) bursts don't overload WM.</p> <p>1. Selecting Texts: text must be complex, 5 types of complexity: a. Archaic = older e.g. Austen/pre-complex e.g. C.S. Lewis children's books) b. Nonlinear = arbitrary motion through time e.g., Bigmama c. Complexity of Narrator e.g. The Magician's Nephew d. Complexity of plot e.g. Lord of the Flies e. Intentionally resistant texts combination of a – d e.g. Fahrenheit 451, students will need cognitive patience (mindset + self-discipline + self-regulation) for complex text.</p> <p>2. Selecting Textual Excerpts: goal holistic understanding of the section, select sections that contribute to the whole, each with clear goal.</p> <p>3. Critically Important to Establish Meaning: who did/said what to whom/when, what it/she etc. refers to, intersperse in rereading, more analysis can follow.</p> <p>4. Attentionally Privileged Environments: few distractions, WM not overloaded, reduce cognitive load by keeping key sentences visible all the time (helps sustain attention), focus on specific details to build their perception.</p> <p>5. Knowledge, Disambiguation, and Close Reading: author assumes BK, need to check.</p> <p>6. Questions: intersperse and end with generative activities, types: Key Line (analyze single sentence/ Comparison (two sections in close proximity)/ Pattern (look for recurring idea/phrase with e.g.s)/Sensitivity analysis (see if they can spot subtle changes in a sentence).</p>	<ul style="list-style-type: none"> •