

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

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Content	Do This/Remember This
<p><b>Introduction:</b> This is about <b>reading after phonics</b> – what the <b>research</b> says <b>translated to the classroom</b>. Book built on 7 core arguments – attention/fluency/background knowledge (BK) /vocab/writing/books/complex text.</p>	•
<p><b>Ch 1: The Science of Reading in 7 Key Arguments.</b> <b>1. Building attention:</b> = necessary in effective reading instruction/affects reading <b>speed</b>, <b>prosody</b>, <b>word recognition</b> comprehension (<b>comp</b>)/reading biologically secondary/brains are plastic/cell phones rewire brains. <b>2. Fluency:</b> = <b>prerequisite</b> to reading comp at <b>all grade levels</b>/= <b>ability to read at the speed of sight</b>/ = <b>accuracy at speed + automaticity + prosody</b> (appropriate expression + intonation + phrasing)/determines half of comp/issue in older students (Ss) too. <b>3. Background knowledge:</b> = most important driver of comp after fluency/ reading comp <i>not</i> about skills e.g. making inferences/ability to infer function of prior K/makes for deeper thinking. <b>4. Vocabulary:</b> = single <b>most important form of K</b> (not a skill)/ strong correlation: vocab→ comp/causation harder to establish/vocab hard to measure/subset of BK/<b>speech has fewer rare words</b> than books/'language is the mother not the handmaiden of thought'. <b>5. Intentional writing development:</b> get better at writing = get better at reading/sentence construction skills needs to be taught not just assigned. <b>6. Books = optimal text format</b> for building understanding and comp/ we learn <b>especially well</b> from stories/<b>historically important</b>/Ss find books hard; <b>struggle is beneficial</b>. <b>7. Reading complex texts</b> = gatekeeper to long term success/college readiness link to performance on complex texts/'complex' hard to measure. T must know: <b>cognitive load theory</b>, <b>working memory (WM)</b> <b>easily overloaded</b> by complex tasks/learning is a <b>change to your long term memory (LTM)</b> /<b>processing + meaning = stronger assimilation</b> into LTM/<b>generation effect</b> = you remember more if you generate it/<b>transient information effect</b> = explanatory information disappearing before it can be processed = inferior learning/<b>encoding</b> = transferring ideas from WM to LTM / <b>retrieval</b> means getting it back/<b>curse of the expert</b> = easy to forget how you got there/easier to be <b>curious</b> about things you have K about/<b>Nintendo effect</b> = success breeds motivation.</p>	•
<p><b>Ch 2: Attending to Attention:</b> 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. <b>Neuroplasticity</b> = brains have been rewired for shorter attention span (neurons that fire together wire together)/TL:DR now common. <b>Rewiring can be reversed</b> by:</p> <p><b>1. Teacher Read Aloud (TRA)</b> = exposed to more /harder (syntactically)/richer text faster )</p> <p><b>2. FluentAccountableSocialExpressive (FASE)</b> = T+S reading together with prosody</p> <p><b>3. AccountableIndependentReading (AIR)</b> = silent reading + <b>annotation/books in hard copy</b> not laptops, research clear on benefits / directed + non-directed annotation helps /skills driven objectives= putting cart before the horse, plan for book driven objectives.</p>	•
<p><b>Ch 3: Fluency and Ways of Reading:</b> Fluency = <b>accuracy + automaticity + prosody</b> = critical for comp. Fluency: <b>developed via TRA/FASE/AIR</b>, improved when Ss hear/ read/ reread text aloud, expressive oral reading →expressive silent reading → <b>better readers</b>. <b>Repeated reading</b> = 'most evidence-based fluency intervention': T read, Ss follow text, then Ss reread silently/paired/whole class together. <b>Lack of fluency</b> →overloaded WM →weaker comprehension. <b>1. Orthographic mapping (OM)</b> = words stored (meaningfully) in LTM essential for fluency, needs practice: rereading/'repeated decoding' improves all 3 parts of fluency. <b>2. Strategies:</b> TRA↔FASE↔AIR↔TRA incorporates <b>modelling/ gradual release /practice</b>. <b>a. TRA models prosody</b>/builds their <b>mental models</b>/shows your <b>love of reading</b>. <b>b. FASE</b> ≠ round robin, <b>all should be prepared to read, intentionally assign</b> but don't say how long, <b>reading aloud is driver+ indicator of fluency</b>, strategies: bridge/capture mood/echo/choral response/make mechanics explicit. <b>c. AIR:</b> select text (not complex text, check decoding issues), think about the 'when'.</p>	•
<p><b>Ch 4: The Hidden Power of Background Knowledge:</b> 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 <b>organized + connected</b> in LTM. <b>Build knowledge</b> by: <b>1. Embedding non-fiction (NF):</b> NF text 'in the bull's eye'=directly related to text, 'outside the bull's eye'= <b>unlocks deeper meaning</b>, NF connected to stories easier to remember, <b>timely/topical embedding</b> not all in one go, overlapping questions link fiction/NF. <b>2. Embellishments</b> (visual/text-based supports) + <b>knowledge feeding</b> (oral supports during reading): both help to embed BK) needed for deep comprehension. <b>3. Use knowledge organisers (KO):</b> = one page document/high-priority K to store in LTM.</p>	
<p><b>4. Use retrieval practice (RP):</b> = <b>low stakes quizzing</b>, helps activate what they know + encode</p>	•

knowledge into LTM, can use with KOs, should be easy but not too easy, use <b>elaboration</b> to apply/use not just recall, <b>blocked practice</b> (useful for early encoding), <b>interleaved practice</b> (useful for effective retrieval from LTM)	
<b>Ch 5: Vocabulary Reconsidered:</b> vocab development 1 <sup>st</sup> on list of factors affecting reading success/ ½ 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', <b>better to use RP, treat as BK</b> when appropriate (reactivate at start of lesson) <b>1. Explicit Vocab Instruction (EVI) = plan to introduce a few words* a day</b> , accurate/short definition, give detail of differences, nuances between synonyms, then Active Practice (enables Check for Understanding), but only 360 words a year so... <b>2. Implicit Vocab Instruction (IVI) = during reading choose words*</b> 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. <b>Method =</b> 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. * <b>Tier 2 words most useful</b> (Tier 1 = everyday, Tier 3 = technical)	•
<b>Ch 6: Using Writing to Develop Readers:</b> Writing is <b>slower</b> than speech → <b>more thinking</b> time → <b>more meaning/precision</b> → they <b>remember</b> more from what they read → <b>better readers</b> . <b>1. Formative Writing (FW):</b> Ss 'think in writing' ('Quick Write', 'jot' ideas down/write first then discuss/then revise/model this/keep it brief). <b>2. Developmental Writing (DW):</b> Ss write to 'expand syntactic control' a. <b>Art of the Sentence:</b> prompts scaffold/improve syntax/single sentences! b. <b>Sentence Expansion:</b> give short sentence/prompts to expand or embed. <b>3. Summative Writing:</b> Ss write to <b>support + explain arguments</b> (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). <b>4. Writing Before Discussion:</b> <b>more value:</b> enables Ss and T to prepare/Ss more confident/richer discussion, <b>more transfer:</b> to LTM from WM. <b>5. Stamping:</b> , creates manageable chunks for memory from complex narratives/reworking aids memory/ using stamps frees WM. <b>6. Revising:</b> editing =mechanics ≠ revising = meaning making–harder), don't JUST revise essays, more frequent shorter practice (sentences/paras).	•
<b>Ch 7: The Power of the Book:</b> [Decline of the book due to: tests content agnostic → use of shorter extracts/ passages/student choice/use of videos/S resistance/belief you can teach transferrable critical thinking/reading skills.] More books → more knowledge = network effect, accelerates learning. <b>1. Stories are Cognitively Privileged:</b> stories a. treated differently in memory/evolution = made groups close knit → <b>increased survival chances/</b> b. build knowledge + empathy easily as brain treats stories and experiences similarly/easier to remember/ needs to be connected reading/reading together (aloud) <b>enriches connections</b> through shared experience/ <b>2. The Medium IS the Message:</b> = the <b>world is complex</b> → needs <b>steady focus to understand it</b> , books → slow, reflective, deep, and thoughtful = the message, and the thinker. <b>3. Books are Cultural Capital:</b> knowing useful things gives you cultural capital/ <b>provides opportunities/ opens doors</b> , reverse true→ lack of access is a profound disservice/ excludes people. <b>4. All Books Are Equal But...</b> : a. Choose books that: are <b>truly great</b> /model the craft of <b>meaning making at the highest level</b> /will stay with the Ss <b>forever</b> /enable Ss to talk about <b>ideas from a different time and place</b> /will be <b>relevant in 20 years</b> b. Get them to read outside class with frequent, short, specific, factual, straightforward, open Reading Checks.	•
<b>Ch 8: Close Reading:</b> = <b>focused, detail-oriented rereading</b> of short sections in <b>attentionally-privileged setting</b> + chance to <b>encode</b> (via writing/discussion), short (2-3mins) bursts don't overload WM. <b>1. Selecting Texts:</b> text <i>must</i> be complex, 5 types of complexity: a. <b>Archaic</b> = older e.g. Austen/pre-complex e.g. C.S. Lewis children's books) b. <b>Nonlinear</b> = arbitrary motion through time e.g, Bigmama c. <b>Complexity of Narrator</b> e.g. The Magician's Nephew d. <b>Complexity of plot</b> e.g. Lord of the Flies e. <b>Intentionally resistant texts</b> combination of a – d e.g. Fahrenheit 451, students will need <b>cognitive patience</b> (mindset + self-discipline + self-regulation) for complex text. <b>2. Selecting Textual Excerpts:</b> goal <b>holistic understanding</b> of the section, select sections that contribute to the whole, each with clear goal. <b>3. Critically Important to Establish Meaning:</b> who did/said what to whom/when, what it/she etc. refers to, <b>intersperse</b> in rereading, more analysis can follow. <b>4. Attentionally Privileged Environments:</b> <b>few distractions</b> , WM not overloaded, <b>reduce cognitive load</b> by keeping key sentences visible all the time (helps sustain attention), focus on specific details to build their perception. <b>5. Knowledge, Disambiguation, and Close Reading:</b> author assumes BK, need to check. <b>6. Questions:</b> intersperse and end with generative activities, types: <b>Key Line</b> (analyze single sentence/ <b>Comparison</b> (two sections in close proximity)/ <b>Pattern</b> (look for recurring idea/phrase with e.g.s)/ <b>Sensitivity analysis</b> (see if they can spot subtle changes in a sentence).	•