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

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Content	Do This/Remember This
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.	•
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.	•
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: **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.	•
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'.	•
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	•

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)	
Ch 5: Vocabulary Reconsidered: vocab development 1st 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', **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)	•
Ch 6: Using Writing to Develop Readers: Writing is slower than speech → more thinking time → more meaning/precision→ they remember more from what they read → better readers. **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. **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 ≠ revising = meaning making–harder), don't JUST revise essays, more frequent shorter practice (sentences/paras).	•
Ch 7: The Power of the Book: *[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. **1.** Stories are Cognitively Privileged: stories a. treated differently in memory/evolution = made groups close knit → 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/ **2**. The Medium IS the Message: = the world is complex → needs steady focus to understand it, books → slow, reflective, deep, and thoughtful = the message, and the thinker. **3.** Books are Cultural Capital: knowing useful things gives you cultural capital/ provides opportunities/ opens doors, reverse true→ lack of access is a profound disservice/ excludes people. **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.	•
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. **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. **2.** Selecting Textual Excerpts: goal holistic understanding of the section, select sections that contribute to the whole, each with clear goal. **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. **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. **5.** Knowledge, Disambiguation, and Close Reading: author assumes BK, need to check. **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).	•