



Content	Do This/Remember This
<p><b>Introduction: Real classrooms, real students, real teachers:</b> Rainforest (RF) metaphor: diverse individual interdependent specimens, each has roots/trunk/leaves like classroom. School structure: plantation (PL) vs RF. Always finding most effective sequence to build trunk of knowledge + nurturing environment (roots) + exploring possibilities (canopy). Teaching is unpredictable, teachers evolve, that makes it interesting.</p>	<ul style="list-style-type: none"> <li>• Ecological metaphors are useful</li> <li>• Classrooms are like rainforests – complex</li> <li>• Lessons never go to plan</li> <li>• Growth takes time... in both</li> <li>• Competition for limited resources... in both</li> </ul>
<p><b>Part 1. The Learning Rainforest Metaphor:</b>  <b>Chapter 1: My Rainforest Experience: Personal history:</b> school - caring, inspiring physics teacher (T) driven by knowledge, variable feedback in other subjects. <b>Teaching:</b> balance of rigour + enthusiasm = success, making a difference. <b>Influences:</b> Bill Rogers (behaviour management), Dylan Wiliam (formative assessment (FA)), Ron Berger (excellence), Daisy Christodoulou (Seven Myths), Martin Robinson (Trivium 21C). <b>Great Ts:</b> are drivers/nurture respectful relationships/take joy in going off-piste/celebrate the power of learning/ principled/work with integrity/design curricula based on understanding of the learning process. <b>Real students (Ss):</b> diverse, unique knowledge and skills (Nuthall). <b>RF thinking:</b> autonomy ↔ institution, <b>School as PL</b> = control/compliance/standardization/exam culture/high-status data/accountability/new initiatives accepted unquestioningly. <b>School as RF:</b> nurturing Ts and Ss/acknowledgement of complexity/autonomy/data informs/no 'right way' but are things to avoid/dynamic/organic/personalized professional development (PD)/ experiment/tech as an option/recognition of wide range of achievement. <b>Vines in RF</b> = bad practice allowed to continue via autonomy, need cutting back. <b>Solution:</b> Managed RF.</p>	<ul style="list-style-type: none"> <li>• 'Quality of teaching can and should be improved' – <i>Dylan Wiliam</i></li> <li>• A lot of what 'works' depends on context</li> <li>• Power in alignment around ethos, curriculum, pedagogy (may be engineered)</li> <li>• Quality assurance is necessary</li> <li>• School culture should be liberating, invigorating, inspiring</li> <li>• PD → Ts sustained deliberate practice of new methods + evaluation/reflection</li> <li>• PL/RF pattern in schools, teachers, students</li> <li>• Novices might need more of a PL, experts more of a RF... move towards RF</li> <li>• Goal: students develop self-discipline, maturity, self-regulation to thrive anywhere</li> </ul>
<p><b>Chapter 2: The Progressive-Traditional Debated and the Trivium:</b> 'Doing' teaching vs. 'thinking' about teaching = many teachers (incl. Helen). <b>Prog vs Trad:</b> Often presented as polarized (knowledge vs. skills)/descriptors are indicative of one's stance (student centred vs. teacher led, discovery vs didactic and many more)/language on both sides is charged/roles of Ts &amp; Ss different/affects math(s) &amp; reading instruction choices. <b>Behaviour:</b> 'compliant' = problematic/compliance with reasonable rules ok, 'compliant' children not ok/depends on context/there are degrees of compliance. <b>Case studies:</b> Building Learning Power (Guy Claxton), School (Don't) Kill Creativity (Ken Robinson), 21<sup>st</sup> C skills (Carol Dweck), Michaela School, London (ethos: friendly, warm and strict discipline, educating the whole child), Trivium 21C – knowledge (grammar)/ exploration (dialectic)/communication (rhetoric) (Robinson).</p>	<ul style="list-style-type: none"> <li>• Easy to just 'do' teaching without thinking about what you're doing and why</li> <li>• Overstated 'trad' → plantation</li> <li>• 'Prog' often blamed for failures of system</li> <li>• Compliance not compliant</li> <li>• Knowledge is foundational</li> <li>• Warm, friendly and disciplined is possible</li> <li>• 'Head, heart, hand' = 'academic, character, can-do' like the trees</li> <li>• False dichotomy – use the best of each</li> </ul>
<p><b>Chapter 3: The Curriculum Debate:</b> What should Ss learn? <b>Knowledge (K)</b> (what), <b>skills (Sk)</b> (which) = curriculum, <b>details</b> need careful thought → determines pedagogy, can't develop generic 'thinking skills' free of domain knowledge. <b>4 types of curriculum</b> (Tim Oates): <b>Intended</b> (what is specified)/<b>Enacted</b> (what is actually taught)/<b>Assessed</b> (what's in the test)/<b>Learned</b> (what Ss leave with). Ss experience can be very different despite same specification, what T chooses depends on values (what matters) &amp; science (how Ss learn). Ts should know where their curriculum comes from. <b>International Baccalaureate:</b> framework philosophically driven values → content knowledge. <b>English National Curriculum:</b> specifies minimum, broad and balanced, 'the best that has been thought and said' = cultural capital, developing character + intellect, provides strong 'trunk' of knowledge (but not identical experiences as Ts have some choice, more in history, less in science). <b>US:</b> Hirsh: failures due to lack of cultural literacy &amp; explicit teaching of K, comprehension issues due to lack of knowledge → Core Knowledge Foundation (knowledge-led curriculum, optional, guidance to influence enacted curriculum). <b>Cultural capital:</b> acquired not taught, like the leaves in the RF, most advantaged Ss have the most. <b>Student voice:</b> can't make choices with the trunk, conversations important.</p>	<ul style="list-style-type: none"> <li>• Teacher should know WHY they are teaching what they are teaching</li> <li>• Skills of teaching have content-driven context</li> <li>• We impose our values in how we choose to teach</li> <li>• Possible to enact intended curriculum in a variety of ways to meet assessment but learned curriculum will differ</li> <li>• Specifying core knowledge is a matter of equity and social justice</li> <li>• Can build cultural capital by the broad design of the curriculum (like leaves)</li> <li>• 'As human beings we are the inheritors... of a conversation... started in primeval forests... over centuries... in public and in our heads'.</li> </ul>
<p><b>Chapter 4: What Does the Research say?:</b> Embrace research cautiously while recognizing limits. <b>Reading research:</b> Problems: effect sizes (ES), definitions, boundary conditions. Example: Visible Learning (Hattie, 2009) literature review – meta-analysis of homework: ES = 0.15 for primary, 0.64 for secondary → complex, how is 'homework' defined, can't take ES at face value, beware averages. <b>Using social science/psychology research:</b> will give insights, context is critical, but need to be able to adapt, 'you can't have a top 10 strategies because it depends how you use them' Hattie. <b>Research says:</b> <b>1. Classroom climate:</b> conducive to learning = positive relationships, high expectations, focus on effort, positive group dynamics by design. <b>2. Principles of instruction:</b> develop pedagogical content knowledge (PCK), anticipate misconceptions, use qs effectively, engineer success, plan using content-based goals, use guided + independent practice + effective feedback. <b>3. Memory:</b> Ts need to teach explicitly (by chunking K) to build K in long term memory (LTM), plan for cycles, low-stakes, spaced and interleaved retrieval, use meta-cognition/elaboration for strong schema building.</p>	<ul style="list-style-type: none"> <li>• Always be aware that you might be wrong!</li> <li>• Science is not about certainty; it's the best answers we have at the moment</li> <li>• What works one day may not work the next</li> <li>• It only 'works' if it supports long term learning (which is demonstrable)</li> <li>• Teacher-led instruction to develop knowledge in LTM is at core of successful learning</li> <li>• When implementing research consider opportunity cost</li> <li>• When not research informed but part of dialectic... ok but be aware.</li> </ul>

<p><b>Chapter 5: How Does Assessment Work?:</b> Plantation: high-stakes testing distorts practice &amp; assessments. <b>Assessment</b> = gauging learning via a <b>proxy of performance</b> → use to inform teaching or report somewhere or both ≠ data. <b>Issues:</b> Grades/levels useful at macro level of cohorts but problematic when translated to individuals, raising the bar too fast, teaching to the test, only some things can be assessed BUT low-stakes testing can help with retrieval (Bjork). <b>Absolute vs. relative standards:</b> Bell curve (learners in competition), hard to define standards if assessment competitive/comparative, progress easier than benchmarking. <b>Data Delusion:</b> <b>Grading is massively flawed</b> but somehow holds sway in many places, grade boundaries dangerous. <b>Alternatives:</b> <b>Separate FA</b> (specific/frequent/repetitive/recorded as raw marks) + summative assessment (<b>SA</b>) (standard conditions/scaled scores/sampling large domain/ infrequent), <b>Responsive teaching</b> (short-cycle activity/response/adapt), <b>Feedback</b> (Austin's butterfly, exemplars), <b>Authentic A</b> (by subjects), <b>Marking/grading</b> (Intelligent, lean)</p>	<ul style="list-style-type: none"> <li>• We don't 'measure' learning - assessment uses proxies</li> <li>• Grades don't tell us much about what a student knows or can do</li> <li>• Not everything we value can be measured</li> <li>• Grades are broad distribution markers with fuzzy overlapping edges</li> <li>• Summative and formative are not the same</li> <li>• Feedback should improve the learner not the work (William)</li> <li>• Better to have authentic assessments within subjects that attempt to centralise.</li> </ul>
<p><b>Chapter 6: Managing the Learning Rainforest: Learning Tree =</b> <b>Roots:</b> Establishing the conditions (attitudes/ habits/behaviour/curriculum), <b>Trunk:</b> building the knowledge structure (effective methods, FA &amp; feedback, teaching for memory), <b>Leaves:</b> exploring the possibilities (opportunities for hands-on/open, independent learning, oracy). <b>Balance: 80-20:</b> Teacher-led - anything else (but depends on subject). <b>SEND:</b> Good practice: entitlements not favours/ assistants assist &amp; teachers teach/see the S not their label/behaviour needs need educational solutions. <b>ESL/EAL:</b> need access to resources, aiming for fluency not functionality, differentiate support not curriculum goals, nurture students at extremes.</p>	<ul style="list-style-type: none"> <li>• Tree metaphor not linear: all grow at the same time, all interconnected</li> <li>• High expectations best form of inclusion</li> <li>• Differentiation like gardening</li> <li>• Always a balance of treating students as individuals AND providing high quality common experience</li> <li>• Strong trunk (K) enables lots of leaves</li> </ul>
<p><b>Part 2: The Learning Rainforest in Practice:</b>  <b>Chapter 7: Establishing the Conditions C1 - 20:</b>  <b>Attitudes and habits for excellence:</b> 1. Joy, awe &amp; wonder 2. Teach to the Top 3. Rigour 4. Pitch it Up: Explore in depth. 5. Pygmalion: If you expect it, they will do it, don't limit the goals.  <b>Relationships &amp; Behaviour</b> 6. Foster Relationships, Positive, Caring, and Defined: they know where they stand 7. Establish Routines for Excellence 8. Signal, Pause, Insist: waiting is good 9. Positive Framing: not 'stop...!', 'everyone do...!'. 10. Use the System as a Lever not a Weapon 11. Silence is Golden: set it up as haven for learning in 12. Keep Perspective: basics, positive <b>Planning the Curriculum</b> 13. Big Picture, Small Picture: Zoom in/out, make a roadmap that you use. 14. Plan the Steps 15. Specify the Knowledge 16. Objectives vs. Tasks 17. Scaffolds (during learning) &amp; Stabilisers (have to come off in the end) 18. Skills &amp; Drills 19. Build the Words, Plan the Reading: reading fluency → independence 20. Build a Timeline: give the big picture</p>	<ul style="list-style-type: none"> <li>• Be openly passionate &amp; enthusiastic</li> <li>• Celebrate intellectual curiosity &amp; challenge</li> <li>• Expect the best from EVERYONE</li> <li>• Behaviour: compliance is not suppression</li> <li>• State what you expect, rehearse, reinforce</li> <li>• Always take care with language, be the adult</li> <li>• You can reset at ANY time, not just August</li> <li>• The job is hard... use your team</li> <li>• All curriculum decisions need a rationale</li> <li>• Plan for what they will be <i>thinking</i> FIRST</li> <li>• Drills → fluency → automaticity → mastery</li> <li>• Set the historical stage in your subject</li> </ul>
<p><b>Chapter 8: Building the Knowledge Structure K1 - 20:</b>  <b>Explain/Model/Practice/Question/ Feedback/Assess</b> 1. Explaining: using stories/analogies/ models/pictures/learner perspective 2. Modelling and Metacognition: explain your thinking/ model the dialectic 3. Check for Understanding: reject self-report, ask qs 4. Probing: follow up 5. Go Dialogic: = convo to explore meaning 6. Think, Pair, Share: give safe space for exploring with peers, feed back to group 7. Whole-class Response: mini whiteboards (MWB) are essential 8. Multiple Choice Hinges: qs with misconceptions about key knowledge 9. Guided Practice: need structure 10. Say It Better: every time, get them to re-do it better.  <b>Feedback &amp; Review</b> 11. Verbal Feedback: care with generalities 12. Responsive Teaching: collect data/assess learning/adapt teaching 13. Marking (Grading): Keep it Lean: be selective 14. Whole-Class Feedback: scan all books, select common issues, address with whole class 15. Close the Gap 16. Teach for Memory 17. Daily/Weekly/ Monthly Review 18. Face It: Facts/ Apply/Connect/Exam practice 19. Learning by Heart 20. Homework = Guided Study</p>	<ul style="list-style-type: none"> <li>• Mode A: what you do 80% of the time = effective teacher instruction</li> <li>• Show them what 'good' looks like</li> <li>• Go beyond simple Q+A – extend to deepen understanding = dialogic</li> <li>• ? on MWB SO useful – how else do you know they don't know?</li> <li>• Instruction → guided practice → independent</li> <li>• Feedback → not just about their progress so far → focusses on what to do next/better</li> <li>• Ss you do more work than you do</li> <li>• Giving time Ss to act on feedback closes gap</li> <li>• 'You're not doing it for me, you're doing it for yourself'</li> </ul>
<p><b>Chapter 9: Exploring the Possibilities P1 – P20:</b>  <b>Projects and Hands-On Learning:</b> 1. Hands On: set standards, demand rigour 2. Ambiguity &amp; Uncertainty: not everything has a right answer 3. Play Detective: identify patterns 4. Deep End: demanding challenge, builds resilience 5. Groups: Goals &amp; Roles 6. Projects: exemplars help 7. Keep It Real: Authentic Projects, Products, Experiences 8. Get Creative: Learn to Choose 9. 'Dazzle Me': Keeping It Open 10. Off-Piste: 'off the curriculum track', current affairs.  <b>Further Possibilities:</b> 11. Class Forum 12. Reciprocal Teaching: get students to teach class 13. Flipped Learning: learn before lesson 14. Online Tutorials 15. Co-constructions Sidekicks: people 'rise to the occasion' 16. Independent Tools &amp; Tricks: break 'independence' down 17. Structured Speech Events 18. Debate 19. Third Time for Excellence 20. Excellence Exhibition</p>	<ul style="list-style-type: none"> <li>• Mode B: the other 20% - part of enacted curriculum, integrated not separate to A</li> <li>• 'If you're not struggling, you're not learning'</li> <li>• Ts often struggle to let them struggle</li> <li>• Choose group (work) wisely, not by default</li> <li>• Build Ss confidence to make choices</li> <li>• Some strategies (e.g. flipped) depend on 100% participation – context dependent</li> <li>• Give space for Ss to step up</li> <li>• Celebrate 'excellence' publically.</li> </ul>
<p><b>Conclusion: Cognitive Biases:</b> Every teacher's situation is unique; same basic challenges (conditions/knowledge/possibilities). <b>Using 3-part tree model</b> → Trivium style curriculum in practice, balancing prog/trad, balancing principles &amp; practice, enacted = knowledge rich + cultural capital. <b>Optimism:</b> using research to debunk myths, protection against fads. <b>3-part model works for Ts too:</b> create conditions to thrive, continually learn both subject &amp; PCK, explore possibilities for what teaching can be. <b>Future teachers:</b> aiming for deeper insights, greater clarity in our collective understanding.</p>	<ul style="list-style-type: none"> <li>• Teaching is rewarding because it is a fusion of art and science</li> <li>• For equity curriculum should be mapped out</li> <li>• The essence of the profession: reflection, debate, research, experimentation, innovation, collaboration, open to challenge, sharing everything, learning from each other.</li> </ul>