24 Ways to Embed Effective Explanations & Modelling in Your Classroom

Evidence-informed strategies, with or without technology · Rooted in cognitive and educational research

Rooted in the work of Rosenshine, Sweller, Mayer, Paivio, Willingham, Atkinson, and the EEF Digital Technology Guidance (2019)

"To improve learning, technology must be used in a way that is informed by effective pedagogy." — EEF, 2019

Pedagogy First
24 STRATEGIES TO TRY TODAY

Structuring Explanations · **Managing Cognitive Load** · **Multimedia & Dual Coding** · **Modelling & Worked Examples**

01 — Small Steps, Always
STRUCTURING EXPLANATIONS

Rosenshine: present new material in small steps with practice after each. Use animations to chunk information and reveal content gradually. Let students process before continuing.

TECH slide animation; progressive reveal
INFORMED BY Rosenshine

02 — Concrete Before Abstract
STRUCTURING EXPLANATIONS

Willingham: anchor new ideas to concrete examples first. Use images, video or objects to make the abstract visible before naming it. Move to the abstract once the concrete is secure.

TECH visualiser; image or video clip
INFORMED BY Willingham

03 — Connect to Prior Knowledge
STRUCTURING EXPLANATIONS

Rosenshine: connect to prior knowledge before introducing anything new. Use a retrieval starter or concept map on screen to activate what students know. Link before you launch.

TECH concept map or retrieval tool
INFORMED BY Rosenshine

04 — Clarity Over Novelty
STRUCTURING EXPLANATIONS

The EEF found clarity matters more than delivery method. A diagram under a visualiser can outperform a polished video. Choose the tool that makes the idea clearest, not the newest.

TECH any display tool used with purpose
INFORMED BY EEF

05 — Check, Don't Assume
STRUCTURING EXPLANATIONS

Listening is not learning. Use live polls or mini whiteboards to check understanding at every step. Rosenshine: reteach before moving on. The explanation is the start, not the finish.

TECH live polling or mini whiteboard tool
INFORMED BY Rosenshine

06 — Supplement, Never Substitute
STRUCTURING EXPLANATIONS

The EEF: technology works best when it supplements teaching, not replaces it. A screencast works alongside classroom explanation, not instead of it. Supplement, never substitute.

TECH screencast; LMS for replay access
INFORMED BY EEF

07 — Four Slots, No More
MANAGING COGNITIVE LOAD

Sweller: working memory holds about four items. Every screen element competes for those slots. Strip slides to essentials. Press B to blank the screen when you want attention on you.

TECH B/W key; clean slide design
INFORMED BY Sweller

08 — Avoid Split Attention
MANAGING COGNITIVE LOAD

Sweller's split attention: separate text and diagrams force learners to search between them. Integrate labels directly into the image. Use annotation tools to build the diagram live.

TECH annotation tool; integrated diagrams
INFORMED BY Sweller

09 — Say It or Show It, Not Both
MANAGING COGNITIVE LOAD

Sweller's redundancy effect: narrating text on screen forces double processing. Say it or show it, not both. Use the B or W key to blank the slide while you talk through the idea.

TECH B/W key in PowerPoint or Keynote
INFORMED BY Sweller

10 — Remove the Clutter
MANAGING COGNITIVE LOAD

Mayer's coherence: remove every word, image and sound that does not support learning. Strip clip art from slides. Cut background music. Every element on screen must earn its place.

TECH clean slide template; minimal design
INFORMED BY Mayer

11 — Signal What Matters
MANAGING COGNITIVE LOAD

Mayer's signalling: bold, arrows and highlights direct attention to what matters. Use annotation tools to signal live during the explanation. Without it, learners search alone.

TECH annotation; slide highlight features
INFORMED BY Mayer

12 — Chunk and Reveal
MANAGING COGNITIVE LOAD

Mayer's segmenting: break content into chunks. Use slide animations to reveal one idea per click, not auto-play. Let working memory process before the next chunk arrives.

TECH slide animation; click to reveal
INFORMED BY Mayer

13 — Words and Images Together
MULTIMEDIA & DUAL CODING

Paivio's dual coding: the brain processes words and images through separate channels. Design every slide with both: a key visual paired with minimal text. Two routes to the same idea.

TECH dual coded slide design
INFORMED BY Paivio

14 — Narrate, Don't Label
MULTIMEDIA & DUAL CODING

Mayer's modality: people learn better from images with narration than images with text. Record a narrated screencast over a diagram. Let the voice do what text would overload.

TECH screen recording with voiceover
INFORMED BY Mayer

15 — Keep Words Near Images
MULTIMEDIA & DUAL CODING

Mayer's spatial contiguity: place words near the images they describe. Labels sit beside the diagram, not in a separate list. Use slide design to keep related information together.

TECH integrated slide layout
INFORMED BY Mayer

16 — Progressive Reveal
MULTIMEDIA & DUAL CODING

Use animations to reveal content one step at a time. One idea per click, building the full picture gradually. Progressive reveal aligns the display to the pace of your explanation.

TECH slide animation; appear on click
INFORMED BY Mayer; Sweller

17 — Short Screencasts
MULTIMEDIA & DUAL CODING

Record short screencasts with narration over visuals. Mayer: images plus voice outperforms text-heavy slides. Keep each video to one idea. Brevity beats completeness every time.

TECH screen recording tool; Loom or similar
INFORMED BY Mayer

18 — Pre-Train the Vocabulary
MULTIMEDIA & DUAL CODING

Mayer's pre-training: teach key terms before the main explanation. A vocabulary slide or pre-lesson video builds familiarity first. Learners who know the words can focus on the ideas.

TECH vocabulary slide; pre-lesson video
INFORMED BY Mayer

19 — Think Aloud
MODELLING & WORKED EXAMPLES

Rosenshine: model the process, not the product. Use a visualiser or screen share to think aloud live. Narrate your decisions as you work. Make invisible expertise visible to all.

TECH visualiser; screen share with narration
INFORMED BY Rosenshine

20 — The Visualiser as Stage
MODELLING & WORKED EXAMPLES

A visualiser turns any desk into a modelling stage. Show handwriting, annotate text, build diagrams under the camera. The EEF found this among the most promising classroom technology.

TECH visualiser or document camera
INFORMED BY EEF; Rosenshine

21 — Worked Examples on Replay
MODELLING & WORKED EXAMPLES

Sweller and Cooper: students learn more from worked examples than equivalent problems. Record a screencast of the example so students can pause and study the method at their pace.

TECH screen recording; LMS for sharing
INFORMED BY Sweller & Cooper

22 — Alternate Examples and Practice
MODELLING & WORKED EXAMPLES

Atkinson: alternate worked examples with practice. Display an example on screen, then set a parallel task. Example, try. Example, try. Interleaving builds understanding faster.

TECH display and task alternating on screen
INFORMED BY Atkinson; Sweller

23 — Fade the Scaffolds
MODELLING & WORKED EXAMPLES

Rosenshine: begin with full support, then fade. Show a complete example, then a partial one with gaps, then independent practice. Use fillable templates to structure the fading.

TECH fillable template or shared doc
INFORMED BY Rosenshine; Sweller

24 — Simulations Beyond Physical Limits
MODELLING & WORKED EXAMPLES

The EEF found simulations let students manipulate variables and see consequences beyond physical limits. Use to extend your explanation, not replace it. Technology serves pedagogy.

TECH simulation tool; interactive model
INFORMED BY EEF

PEDAGOGY FIRST, TECHNOLOGY SECOND. Always.
Rooted in the work of Rosenshine, Sweller, Mayer, Paivio, Willingham, Atkinson, and the EEF Digital Technology Guidance (2019)
Want to work together? **ictevangelist.com**

CREATED BY
Mark Anderson