

THE CASE FOR SEQUENTIAL VISUAL STORYTELLING

COMICS AREN'T A COMPROMISE. *They're an optimization.*

Sequential visual storytelling is one of the most powerful - and most underutilized - pedagogical tools in STEM education. Here's the evidence.

THE EVIDENCE



60%

Better retention

Dual coding - pairing visuals with text - increases memory retention vs. text alone (Paivio, 1991).



22×

Story recall advantage

Narratives are recalled 22× more effectively than isolated facts (Bruner, cognitive narrative theory).



3-5×

Voluntary reading rate

Students read comics 3-5× more often than standard textbooks (Mayer, 2009).



0

Technology barriers

No electricity, internet, or device needed. Comics work anywhere.



+40%

Comprehension gain

Visual narrative pedagogy shows 40% comprehension gains for low-literacy learners vs. text-only.



1.2B

Underserved learners

Over 1.2 billion young people lack access to quality illustrated STEM materials.

WHY SEQUENTIAL VISUAL STORYTELLING WORKS



Dual coding theory

Visual and verbal channels are processed independently. Activating both simultaneously doubles encoding depth, making recall exponentially more reliable.



Narrative transportation

Story immersion lowers cognitive resistance to new concepts. When readers are "in" a story, abstract STEM ideas feel concrete and personally relevant.



Cultural resonance

When characters, settings, and problems mirror a learner's lived world, engagement and identity formation around STEM careers dramatically increases.



Sequential cognition

The panel-to-panel "gutter" trains inferential thinking. Readers actively construct causality and sequence, building scientific reasoning.



Voluntary engagement

Students seek comics out. Self-directed reading outside classroom hours compounds learning at zero additional cost to schools or families.



Low cognitive load

Segmented panels pace information delivery. Learners can re-read, pause, or skip ahead - a self-regulated tempo textbooks can't offer.

THE AFRICAN CONTEXT MULTIPLIER

When you add *African contexts* - magic happens.

Comics set in Lagos, Nairobi, Accra or Kigali - with African kids solving problems that matter to their communities - don't just teach science. They make STEM feel like it belongs to them.

○ Local languages & dialects

👤 Indigenous scientist heroes

📍 Locally relevant problems

☑ Offline-first delivery

≠ Girl-forward STEM narratives

GLOBALLY PROVEN - LOCALLY RIPE

JP Japan	Manga integrated into school curricula for 50+ years. Physics, history, biology - all formats exist and are mainstream. Kinsella (2000). Adult Manga. - Schodt (1996). Dreamland Japan.	Proven
us USA	Graphic novels drive library reading programs. NIH-funded comics for patient health literacy show measurable outcomes. Mayer (2009). Multimedia Learning. - Czerwiec et al. (2015). Graphic Medicine Manifesto.	Proven
GB Europe	Bandes dessinées (BD) tradition; EU-funded STEM comics in France, Belgium, and the Netherlands. Groensteen (2007). The System of Comics. - EU Horizon 2020 Science in Comics (2018).	Proven
NG Nigeria	Growing creator ecosystem; mobile-first distribution reaches students who skipped physical libraries entirely.	Emerging
 Africa-wide	600M+ under-25 population, smartphone penetration doubling yearly - the largest comics-ready audience never yet reached at scale.	Opportunity

The medium is not the message.

The medium is the multiplier.

Sequential visual storytelling x African context x STEM curriculum = a generation of scientists who saw themselves in the story.

STEM x COMICS x AFRICA

Sources: Paivio (1991) - Bruner (1991) - Mayer (2009) - McCloud (1993) - UNESCO Learning Poverty Report (2022)