An Introduction to Education Research

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SECTION ONE:

1. The Weird World of Education Research
2. Different types of learning
3. Cognitive Load Theory
4. Practical tips for managing Cognitive Load
Researchers present new evidence. This leads to changes in practice through emotions, politics, and prior beliefs.
Researchers present new evidence → Big shouting match on Twitter
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Learning Outcomes

- Understand
- Take action
- Emotion
- Values
- Skills
Types of Learning
Long Term Memory

Episodic

Semantic

Union Bar closes at midnight

Wasabi peanuts are tasty
So I’m going to talk about learning:

- **Knowledge** - useful information
- **Biologically secondary** - requiring mental effort
- **Semantic** - easy-access nuggets
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The Brain
A TIGER is a CAT with STRIPES.
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A TIGER is a CAT with STRIPES

Working memory
CAT
STRIPES
TIGER

Long term memory

Retrieve
CAT
STRIPES
A TIGER is a CAT with STRIPES.
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- Working memory
- CAT
- TIGER
- STRIPES
- Long term memory
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Prior knowledge matters

Nerwign
Cognitive Load

- Working memory
- Bald
- Guinea Pig
- Small Pet
- Rodent
- No tail
- Soft
- Friendly

- Working memory
- Bald
- Small
- Pet
- Rodent
- No tail
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You see a banana-shaped Crescent Moon when you can only see a small part of the half of the Moon that is lit by the Sun.
Chunking

When the Moon looks like a banana, it’s called a Crescent Moon.

The Sun only lights up one half of the Moon at a time.

You see a Crescent Moon when you can only see a little bit of the lit side.
Beware distractions
Zaragoza is in Spain’s Aragon region, it’s really nice, and I definitely recommend a trip. There are big puppets. If you go then you have a nice time then you might remember it and that would be episodic memory!

* Types of memory

- Last Sunday
- My first day at school
- Not allowed to come on holiday
- 2+2 = 4

**EpiSodIc!**

**sEmantIc**

Our Sun is a star

Water boils at 100°C

Bees fly

Memory??
Use familiar language

- This is an annual occurrence
- That bright star is Jupiter
- The Moon orbits the Earth, the Earth orbits the Sun, and the Sun orbits the galaxy
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Visualise informational relationships

Centre of Galaxy
5. Identify Key Points

Reducing Cognitive Load:

- **Chunk** information (step by step)
- Beware **distractions** (no cats!)
- Use familiar **language**
- **Visualise** informational relationships
- Identify **key points**
Prior knowledge matters

Working Memory is limited

Long Term Memory is the residue of thought