RETHINKING HOW CHILDREN DEVELOP THINKING IN A DIGITAL WORLD:

WHY ACCESS TO INFORMATION IS NOT THE SAME AS UNDERSTANDING

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CHILDREN HAVE NEVER HAD MORE ACCESS TO INFORMATION. BUT ACCESS IS NOT THE SAME AS UNDERSTANDING.

Children today are growing up surrounded by constant information yet have fewer opportunities to develop independent thinking.

So, the question becomes:

how do children learn to think in a world designed for speed, not depth?

WHAT IS SHAPING CHILDREN'S THINKING TODAY?

Children are developing ways of thinking in environments designed for speed, not reflection.

- Children have unprecedented access to information
- Content is increasingly fast, algorithm-driven and engagement-led
- Exposure to persuasive and polarised material is rising
- Attention and cognition may be reshaped by digital environments (Firth et al., 2019)
- Familiarity with technology does not equal critical reasoning (Kirschner & De Bruyckere, 2017)
- Late childhood is a key period for developing evaluative thinking (Kuhn, 2001)

WHAT CURRENT APPROACHES PRIORITISE, AND WHAT GETS MISSED

Many education systems prioritise performance.
But performance is not the same as understanding.

- Attainment used as the primary indicator of learning
- Comparison and benchmarking shape how ability is understood
- Errors often interpreted as lack of ability rather than part of learning
- Speed, accuracy and correctness prioritised over reflection
- Performance fluency does not equal durable understanding (Dunlosky et al., 2013)
- Deeper thinking processes are less visible, and often under-supported

WHY IMPROVING MOTIVATION ISN'T ENOUGH

Approaches such as positive psychology have improved how children feel about learning, but they do not fully address how thinking develops.

- Growth mindset reframes fixed ability beliefs (Dweck)
- Self-determination theory links autonomy to engagement (Deci & Ryan, 2000)
- PERMA broadens definitions of success beyond attainment (Seligman, 2018)

But:

- Motivational gains do not necessarily lead to deeper thinking
- Epistemic development (how children understand knowledge) remains under-addressed

WHAT CURRENT APPROACHES IMPROVE. AND WHAT THEY DON'T

Positive psychology has shifted education towards:

- Growth mindset and developable ability
- Autonomy and intrinsic motivation
- Engagement and meaning in learning

However:

- Focus is on motivation and experience
- Less attention on how children develop the ability to think
- Epistemic development remains under-addressed

THINKING DEVELOPS, IT DOESN'T JUST HAPPEN

Children's understanding of knowledge changes over time.

- Children begin with "right vs wrong" views of knowledge
- Over time, they can learn to compare ideas and evaluate evidence
- This shift requires practice, it doesn't happen automatically
- Opportunities to explain, question and reflect support this development
- Late childhood is a key window for building these capabilities

Without these opportunities,

this shift in thinking may not fully develop.

THE MISSING PIECE: DEVELOPING HOW CHILDREN THINK

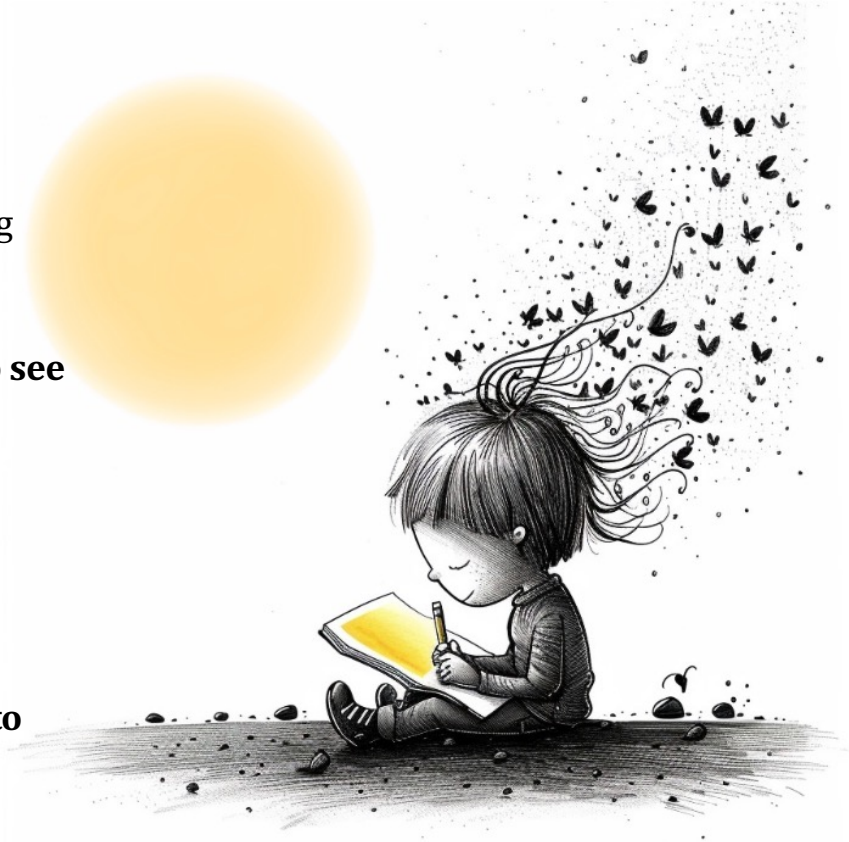
Children are not consistently supported to develop the ability to interpret, evaluate and make sense of knowledge for themselves.

- Most approaches focus on knowledge, performance or motivation
- Less attention is given to how children develop the ability to think
- This includes interpreting information, evaluating claims and forming understanding

This capability can be described as epistemic agency, the ability to see oneself as an active interpreter of knowledge.

- It involves questioning, comparing and revising ideas
- It is critical in digital environments
- It builds intellectual confidence and independence

Without this, children may learn to access information — but not to understand it.



SO HOW DO WE DEVELOP THIS IN PRACTICE?

- Children have access to information, but not always the ability to make sense of it
- Current systems prioritise performance over understanding
- Existing approaches improve motivation, but not how thinking develops

If epistemic agency matters, we must intentionally support it.

A PRACTICAL MODEL FOR DEVELOPING HOW CHILDREN THINK

We have developed a model that supports how children learn to think across the environments they move through.

1. The framework: Build Mindset

- A framework for how thinking develops over time
- Focuses on curiosity, attention, reflection, connection and confidence
- Positions thinking as something that can be built through practice

2. The mechanism: A "thinking gym"

- A series of structured, real-world thinking activities
- Children are asked to question, compare, justify and reflect
- Multiple answers are possible, the focus is on reasoning, not correctness
- Thinking is treated as trainable, not fixed

3. Where it happens Across everyday environments

- Delivered through simple, paper-based materials
- Designed for use at home, alongside school
- Parents support thinking through prompts and discussion
- Same concepts, different levels of expressive demand (Adventurer / Investigator)

This creates consistent opportunities for children to develop epistemic agency through repeated, real engagement with ideas.

WHAT THIS WILL CHANGE, AND HOW WE WILL TEST IT

The project will test how structured, repeatable thinking experiences influence how children engage with ideas over time.

🔷 1. What will change (child level)

•Increased ability to express and justify ideas
•Greater use of reasoning and evidence
•Improved confidence in engaging with uncertainty
•Movement away from "right vs wrong" thinking

🔷 2. What will change (environment level)

•More meaningful parent–child conversations about ideas
•Increased confidence among parents in supporting thinking
•Learning extended beyond tasks into everyday interaction

🔷 3. How it will be tested

•Children respond to the same prompt at different points in time
•Responses compared for depth, reasoning and reflection
•Focus on change in thinking, not correctness

🔷 4. What this enables

•A scalable, low-cost model for developing thinking
•Application across schools, homes and communities
•A shift from measuring knowledge → developing understanding

This project moves the focus of learning from what children know, to how they make sense of the world.

THIS IS WHERE ACORN BEGINS.

TAKEN FROM OUR LITTLE BOOK OF HOW TO GROW BIG THINKERS

Big change rarely starts with a plan.

It changes in kitchens.
In playgrounds.
Big impact doesn't start big.
It starts with people who don't wait to be important.

It changes when someone notices something isn't right
and decides not to look away.

And children don't need to grow up
before their thinking starts to matter.

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