CRITICAL THINKING AND LEARNING IN THE AGE OF AI

5 Conversations Parents Can Have With Their Teens

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*Each conversation pairs a **brain truth** with practical **strategies**, a real-world **story** and **questions** you can talk through together.*

1	Avoid popcorn brain
2	Don't outsource your thinking
3	Respond, don't react
4	Don't make big decisions when you're highly stressed or over-excited
5	Watch out for confirmation bias

CONVERSATION 1

Avoid popcorn brain

BRAIN TRUTH

Popcorn brain is the result of constant scrolling. The brain becomes used to constant stimulation, so slower activities such as reading, studying or listening feel less engaging. Popcorn brain leads to a shorter attention span, fragmented short-term memory and difficulty settling. When short-term memory is fragmented, you may notice:

- Forgetting instructions
- Rereading a paragraph
- Losing a train of thought

Working memory has to keep resetting as you try to focus, so learning that needs sustained focus becomes harder.

David Levy (2011) researched the fast-paced online world after years of swiping, and said his brain felt wired to expect constant novelty. Popcorn brain is not a formal medical condition. Levy coined the term to describe what it felt like to think after months of online work. With popcorn brain, our executive functions (critical thinking, problem-solving, planning and organisation) must keep overriding the stimulation habit. That creates a greater cognitive load whenever a task needs prolonged concentration.

STRATEGIES

1. Mix screen time with time outdoors.

2. Limit time in front of a screen.
3. Seek out slower activities, such as board games, collecting something or reading. Over time, slower activities also train the brain to be more settled.
4. When learning, set aside 25 minutes of highly focused, uninterrupted time, followed by a brain break. This is called the Pomodoro Technique (Cirillo, 2000). A brain break refuels the brain after cognitive load, and it can be anything joyful that doesn't involve new learning.
5. Reduce gaming time driven by dopamine seeking.
6. When setting family rules, consider the quality of what your teen is doing online as well as how much time they spend there. Many apps can help you monitor what your teen is engaging with online.

Story: Tomas

A university student named Tomas reported that, after years of solo online work, his brain preferred immediate reward, and delayed reward felt less motivating. He had been online for at least five hours a day for five years.

He now finds studying harder. Maths requires persistence, writing requires sustained effort, art requires focus, and critical and higher-order thinking require pause and reflection. Tomas found he was rereading text messages and emails because he kept losing his train of thought, and he felt he had become a poor listener. While someone was talking to him, his mind would wander into his own thoughts.

He decided to pursue offline activities to rewire his brain, such as fishing with friends and reading for pleasure.

Talk about it

Is screen time reducing your chances to play sport, get outdoors or connect with people face to face?

CONVERSATION 2

Don't outsource your thinking

BRAIN TRUTH

When we learn, there is a physical change in the brain (neuroplasticity) as neural networks are strengthened. With uninterrupted focus and challenge, the dendrites on our neurons (grey matter) grow spines, and the myelin coating on the axons (white matter) thickens. The more grey matter we have, the more information the brain can process. The more white matter we have, the faster our thinking.

Without effort, these changes don't take place, and neural pathways only fire; they don't wire. For long-term memory to stick, we need to fire and wire neural networks through repetition over time. If

we use AI for all our thinking, there will be very few neuroplastic changes, so very little learning is committed to long-term memory.

If you haven't invested the time to build schemas in long-term memory, you are at risk of cognitive bias and thinking traps. Critical thinking requires you to connect new ideas with what you already know. So when you outsource your thinking to AI all the time, you risk not developing your critical thinking skills.

STRATEGIES

1. At work or on an assignment, draft your own original ideas first, before you ask AI to improve the work. This way you are using AI as a tool; it is not using you. AI is excellent for checking grammar, polishing writing, elaborating on ideas and extending your thinking, but it isn't smart to use it for all your thinking.
2. After you learn something new, teach it to someone else to consolidate it in long-term memory, and repeat over time to fire and wire. Repetition and recall strengthen neural pathways.
3. Use AI ethically by always acknowledging its contribution to the end product.

Story: Your brain on ChatGPT

MIT research on AI and brain activity using EEG scans found that students who used AI tools such as ChatGPT to write essays had a 47% reduction in active neural connections compared with those who wrote manually or used traditional research tools. Active brain engagement dropped from 79% to 42%, showing a marked decline in cognitive effort.

Alarmingly, 83% of AI users could not recall what they had just written, compared with only 10 to 11% in the non-AI groups. Teachers described the AI-generated essays as "soulless" and "bland" (Kosmyna et al., 2025). A Grade 10 English teacher noticed that students who used AI for essay drafts struggled to discuss their arguments in class. When asked to explain their reasoning, many drew a blank, highlighting the risk of mental disengagement (Kosmyna et al., 2025).

Students relying on AI also showed weaker memory retention, less neural connectivity and a reduced sense of ownership over their work. The more we learn and commit to memory, the more schemas we have, the more connections we can make, and the less cognitive load we experience when we learn something new.

Talk about it

How much of your last assignment or piece of work was your own original work, and did you acknowledge what AI contributed?

Does your school have clear guidelines for using AI ethically and strategically?

CONVERSATION 3

Respond, don't react

BRAIN TRUTH

Social media platforms are designed to hook your attention by tapping into:

- Emotion
- Reward
- Social approval
- Habit
- Novelty

That's why our attention is so easily hijacked by outrage, excitement, surprise, humour, fear and comparison. They give us a dopamine hit and alert our reticular activating system (RAS). Once we're on high alert, we aren't inclined to slow down our thinking to make good decisions. And online content creators don't always fact-check what they post.

STRATEGIES

1. **Pause** before you act. Respond intentionally rather than reacting instinctively.
2. Ask: *What could go wrong?*
3. Ask: *What evidence tells me this is safe?*
4. Ask: *What is the consequence if I'm wrong?*

Story: Why false news wins

Young people are flooded with fake news, often blended with some factual messages. Referring to the fallout that explodes on social media after an emotive story or post, psychologist Dr Michael Carr-Gregg recently said:

> *"They [teenagers] are at risk of seeing that the truth doesn't always matter, that being loyal is more important than being honest, that getting angry and outraged is a pretty effective way to get attention as long as you show conviction. The loudest voices demanding allegiance encourage young people to pick a side, defend it to the death and never concede an inch. That's not strength. That's intellectual laziness dressed up as conviction."*
>
> Carr-Gregg, 2026

We need to teach young people to pause, probe, prove and position themselves, so they can change their minds when the facts demand it.

A UNESCO survey of content creators in 45 countries found that 62% did not carry out rigorous, systematic fact-checking before sharing information, and 73% said they wanted training in how to do it.

An MIT study published in *Science* examined about 126,000 stories shared by around 3 million people. It found that false news was 70% more likely to be shared than true news, and true stories

took about six times longer to reach 1,500 people. False information is often more novel, surprising, frightening and emotional, so our brains want to share it.

Talk about it

Would you say something online that you wouldn't say face to face?

What is your strategy for slowing down your thinking so you respond rather than react?

CONVERSATION 4

Don't make big decisions when you're highly stressed or over-excited

BRAIN TRUTH

The teen brain tends to make decisions based on emotion rather than logic, especially under stress. From around age 11 to 19, the prefrontal cortex (PFC) is at times "offline" while myelination (white matter growth) takes place. Neural pathways that aren't being used are pruned, and others are refined and strengthened in preparation for adulthood.

Without the PFC at full function, we can't access our logical thinking processes as effectively. The PFC is associated with problem-solving, critical thinking, decision-making, organisation, empathy and planning, which is why critical thinking can be tricky for teens and why they sometimes make errors.

On top of that, when any brain is stressed, the lower regions of the brain take over and reduce our access to the PFC. So the teen brain faces a double risk.

STRATEGIES

1. Ask: *What am I feeling right now, and is emotion affecting my decision?*
2. Remember that feelings give us information, and logic makes us stop and test it.
3. Use the 4P tool for critical thinking: **Pause, Probe, Prove, Position**.

Story: Samuel

Samuel (not his real name, to protect his identity), a 15-year-old from California, is a powerful example of why we need to override instinctive emotion with slower, more logical thinking.

In September 2022, Samuel was with friends who were doing a dangerous activity called "couch surfing": sitting on a couch while it is dragged behind a moving vehicle, so it can be filmed for social media. What makes the story so powerful is that Samuel had initially refused to do it. His mother said he had told her how proud he was that he had resisted.

But the following week, he changed his mind. His friends had done it without getting hurt, so it apparently began to feel safe. His mother explained: "Since he saw all of his friends do it and they walked away safe, he must've thought it was OK."

On September 8, Samuel got onto the couch. A couch leg broke, he was thrown off and he suffered catastrophic injuries, including a fractured skull, traumatic brain injuries, spinal fractures, broken ribs and facial fractures. He spent his 16th birthday in a medically induced coma.

Talk about it

When is emotion helpful in decision-making, and when should we rely on reason alone?
Good decision-making needs a balance of emotion (which signals a message), logic (evidence) and intuition (cues we pick up unconsciously from prior experience), mixed just right for the context.

How can you slow down your thinking and reflect on reason and logic before you jump in?

CONVERSATION 5

Watch out for confirmation bias

BRAIN TRUTH

We often notice only the things that support our existing beliefs. This is called confirmation bias, and we all experience it, whether we think so or not. There are over 100 well-documented cognitive biases.

A bias is a shortcut that aims to keep us safe, but it can pull our thinking away from the truth. You can't feel a bias. Biases are hidden in our unconscious processes and act as a lens through which we view the world. It's like thinking you're looking through clear glass when the glass is actually distorted, so you see a slightly different picture.

STRATEGIES

1. Ask yourself: *What am I missing here? What if I'm wrong? What would the opposing view be? What evidence supports my view?*
2. Travel broadens the mind for critical thinking, because you see many layers of "normal". What is normal for one person may not be normal for you at home, or in the next country you visit. Once you see there are many shades of normal, you become more tolerant, curious, empathetic and open to learning, and you start to reflect on the beliefs that shape your critical thinking.
3. If travel isn't possible, read a range of books with different perspectives and world views to explore how other people see things.

Story: The church fire

In August 2026, a church in Quebec, Canada caught fire. Posts began circulating on social media suggesting the fire had been started intentionally by an immigrant. People piled on, and soon there were hundreds of comments supporting that view. When police investigated, they found the fire had been caused by a lightning strike.

The image of the burning church triggered people who already believed immigrants were causing problems (most immigrants were not), and they jumped to the conclusion, without any evidence, that an immigrant was guilty. As the comments mounted, people assumed it had to be true because hundreds of others said so.

This is a strong example of confirmation bias. Critical thinkers check their bias.

Talk about it

Next time you argue with someone about religion or politics, consider why everyone thinks they are right. We can't all be right, can we?

Why do you think hundreds of thousands of people believed the earth was flat?

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