

Critical Thinking from the Ground Up

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By **John Jensen**

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Images of critical thinking in full bloom abound—teams in furious concentration to send rockets to Mars, the ferment of ideas in businesses like Apple and Google, and the patient concentration of a Nobel Prize-winning scientist. Education's work, however, is with the early seedlings of these fruits that present fewer pictures. If a child needs a 2-degree course correction to find his way to intellectual greatness, making the change early is easiest and cheapest if we can understand how to guide him.

My work has enabled me to observe many children with similar school experiences that seldom include a foundation for critical thinking. Seven points I view as systemically underserved could, if better addressed, enhance children's thinking as they mature:

1. Am I safe? Threat presents a visceral challenge to well-being, commanding attention and soaking up brainpower. We are driven to scope out how to meet it. Just as our body automatically catches itself when we lose balance, our psychological system reacts similarly. Particularly when one is helpless to avert threat as children are, stress may show up as preoccupation with imaginary fears, physical awkwardness, acting out, catastrophizing, and emotions that adults label as childish.

And worse, experiences of danger and hurt are not dismissed simply when the child smiles again. The mind instead sustains a field of assumptions about lurking danger that demands constant monitoring. This makes children less intelligent because mental and emotional energy is lost that otherwise would turn to interest in the world and the drive to master it. **The more threat they feel, the fewer resources they have for anything else.**



Schools then face a question. Do they pass students through on the same trajectory—often hurt-laden—that they arrived with, or supply influences children obtain nowhere else? Do we enable children to step up their game, or let them play out the game they brought to our door? Their internal safety is a deep river compelling much of their later experience, yet easy to dismiss. Children appear to comply and learn even if we ignore their deeper emotions, but to rise to their capability, they must reclaim what they otherwise lose to their distresses.

Physical threat is a legitimate concern, but the chance of a terrorist attack or a deranged gunman may occupy more school attention than the actual bully children perceive as ruining their life. Their direct, in-the-moment emotional safety may escape teachers' awareness. Preoccupied with issues certified as more important—getting on with the next lesson and following the rules—teachers steadily admonish, correct, and redirect external behavior and many cede children's inner safety as beyond their ability to deal with. They want children to "get over" their feelings and perhaps refer a child to the school counselor if feelings cross the critical threshold of intruding on schoolwork. Then as children do to each other what teachers do to them, emotional safety never gains a foothold.

Solving this problem is not difficult. It only needs to be important. We look at their face, notice what goes on with them, and it matters to us. Extensive program materials for social-emotional learning can help, but mainly we love them, each one, one at a time. We cherish them and make our personal bond with them a safe harbor into which they can sail their storm-tossed boat at any time. As we make their experience safe and happy, we gift them with added intellectual power to devote to learning. If we don't, they must spend their resources handling today's threat laid upon the residue from all previous threats.

The issue is important even for society's survival. Negative emotion is readily directed to warped ends. An appalling example was Germany before World War II. Populated with the world's leading thinkers in many fields and with one of the world's best education systems, it developed the most powerful army the world had ever seen. Good education did not help with their greatest test, however. Despite their intelligence and learning, the issue for which Hitler supplied a voice was the insult and hardship Germans endured from the settlement of the First World War. Damage, the threat of damage, anger, and resentment united them to support war. Comparably, if we want to elicit the worst in children, we need only allow them to remain angry and afraid. **To elicit their best, we first make them emotionally safe.** For more on this, read Paul Tough's important book, *How Children Succeed*.

2. Is my world subjective or objective? Grasping this single factor could clean up adult thinking like no other. It is as relevant in kindergarten as in geopolitics and can be understood in more refined terms with every year of growth. The belief that their feeling describes the real world is perhaps the most pervasive mistake children make: "Because I feel hurt, Michael hurt my feelings. Because I feel angry, Jennifer made me angry. Because I feel self-conscious, Ariel put me down. Because I feel embarrassed, the teacher embarrassed me." Rather than reflect real-world causality, subjectivity invents a self-protective spin.

Most children (possibly even the majority of adults) do not understand how subjective processes skew their judgment. This mistake is not eradicated just by growing up but usually requires active instruction to correct. Someone must listen to the child, understand the experience propelling his thinking, recognize its flaw, and then gently explain how subjective feelings, moods, and impressions can distort his picture of the world. Only those making this shift become competent to deal with society's organs of power. A tragic default of this led to the attacks of 9-11 and eight years of war in Iraq. An insider to Al Qaeda wrote a summary of a conversation he witnessed:



Zawahiri impressed upon bin Laden the importance of understanding the American mentality. The American mentality is a cowboy mentality—if you confront them with their identity theoretically and practically they will react in an extreme manner. In other words, America with all its resources and establishments will shrink into a cowboy when irritated successfully. They will then elevate you and this will satisfy the Muslim longing for a leader who can successfully challenge the West (Interview with Saad Al-Faqih, Jamestown Foundation, Spotlight on Terror, www.Jamestown.org, Feb 5, 2004).

In short, the US was hurled into the Iraq War because our leaders thought like cowboys. Attitudes root us in an ideology when both distort the real world. The more powerful we become, the more dangerous is our subjectivity. The alternative is to make it a social presumption from kindergarten onward that facts win over opinions—which children learn easiest as they observe adults apply it. All of us of any age need to agree to welcome facts that correct our assumptions.

3. Is my world narrow or broad? In comparing high quality thinking versus low, the distinction between narrow and broad recurs. Though all of us prioritize our time, if we wish to think well even in a single niche, we must range beyond what is given to us. Having mastered a subject, if we think only from the deposit passed on to us, we remain stuck in limitations. For any subject we hope to master, we improve on what we knew before.

People avoid this effort for many reasons. Personal laziness or complacency count, but more often standard instruction communicates to children that intellectual competence is unimportant, that passing designated checkpoints enables them to get by, and getting by is enough.

Fear may narrow them. From toddler onward, children are constantly ready to exceed their prior effort. They innately want to grab, taste, handle, throw, bend, and break—exercising their next increment of capability. As the adult world defines their actions as mistakes and comes down on them, for their emotional survival they eventually comply with what is required, but also may acquire a network of hurts burdening their mind behind a self-protective defense. As they are encouraged to release their past mistakes to try again, try differently, try even more, they reassert their eventual quality of thinking.

This bids us understand children carefully one at a time and grasp the contours of their thinking; be alert to what dampens their interest in the external world and ideas about it, and what makes them afraid or anxious or hurt. As such feelings are resolved, their resources of mind become available for better uses.

4. Is my first impression accurate? A moment when we can catch children's thinking on the fly is in their spontaneous reaction to events. A social conflict unfolding before them, another's irritated word directed at them, their own error at a task—their first response to it often reveals their intellectual bent. Do they think defensively? Are they sympathetic to others' views and needs? Are they curious about causes and conditions? Are they confident enough to try again? As the situation unfolded, did a feeling come up? Can they name it? Is it an accurate response to the situation?

To draw on their tendency to have a first idea and grapple with their thinking right then, a teacher can employ a Consult. In a school year, events typically occur that impact everyone, leaving each with a personal reaction important to him/her. In the Consult, a teacher asks one question everyone can answer, and then invites a brief response—a word, phrase, or sentence—from each in turn. To the question "What was your feeling (or first thought) when X occurred?", their answers taken together reveal their common thinking. The teacher can select any angle to discuss further.

A fourth grade teacher typically started off the morning asking, "What are you feeling today?", hearing from each of his 26 pupils. One morning, one replied "Sad." After everyone's first answer, the teacher went around a second time asking, "What gave you the feeling you named?" The boy replying "Sad" added with a downcast face, "My aunt died last night."

Gasps ensued. Many knew his aunt and were shocked. Some started crying. After a sympathetic response to the boy, the teacher opened a class discussion on "Losses I have experienced." It continued forty-five minutes with a profound impact on the emotional atmosphere in this previously dysfunctional class. **Exploring how children react to common circumstances can open to their basic thinking.**



5. Do others have something to teach me? In the adult world, we typically see high quality critical thinking emerge in groups that possess similar knowledge but are open to challenge from peers. When the U.S. set out to build an atom bomb in World War II, J. Robert Oppenheimer was assigned to lead it, a brilliant man yet not one who required others to agree with him. He assembled a large number of famous scientists, many of whom were known for rigid opinions. Knowing the kind of exchange that would be needed from them, even under the urgency of the war Oppenheimer's priority, ahead of any scientific work, was for this unusual group to spend two weeks just learning to communicate with each other.

Examples are plentiful about the need for openness to feedback. Investment clubs, for instance, enable people to share their ideas about where to invest their money, what stocks to buy. Comparing their results affords an objective measure of the quality of their thinking. It's been found that the best results emerge in the clubs that allow members to challenge each other, where no one is right all the time and **argument is welcome that still sustains the bonds of the group**. Clubs that are "chummy" and agreeable show poorer results. Too many relatives seated together may not want to contradict each other.

Schools can generate such habits readily by organizing the classroom into groups of four. Any given section to learn is broken into four parts. Each member of the group masters a part, everyone teaches their part to the others, and all share the written notes they gather. We want not just a single experience in which a student puts up with challenge, but rather the ongoing activity of listening to, valuing, drawing out, and drawing on the considered fruit of another's thinking.

6. Do I know anything? One cannot think creatively, critically, or any other way about something one does not know. We exercise our thought processes upon what we know. Processes do not precede content for them to work on, and only the gradual accumulation of knowledge enables this to occur. .

I have long been dismayed at the widespread hunt for a shortcut to intellectual excellence: Learn a few techniques for manipulating ideas, and you skip to the head of the line. This assumption ignores how vast is the universe of knowledge, how little of it any of us can accommodate even in a lifetime, and how fundamental is the steady habit of adding objective learning.



Science Magazine (April 17, 1939) carried a letter from Ivan Pavlov written shortly before his death, addressed to the young scientists of Russia. Among his many heartfelt thoughts about tendencies he observed that could undermine good science, he noted:

School yourselves to demureness and patience. Learn to inure yourselves to drudgery in science. Learn, compare, collect the facts! Perfect as is the wing of a bird, it never could raise the bird up without resting on air. Facts are the air of a scientist. Without them you can never fly. Without them your 'theories' are vain efforts. But learning, experimenting, observing, try not to stay on the surface of the facts. Do not become the archivists of facts. Try to penetrate to the secret of their occurrence, persistently search for the laws which govern them.

That American K-12 schools cannot apply such thinking is due to the standard design of instruction that deliberately drives students to study something briefly and then lay it aside. There is no intent, expressed or implied, that students should develop a competent, permanent body of knowledge about anything. The destructive presumption

instead is that a credit or test score satisfying a checkpoint leaves behind sufficient residue of learning to allow society to classify a student as intellectually competent.

Years of international studies comparing US students with others reveal the hollowness of this assumption. No one builds a permanent body of knowledge without intending it and exerting steady effort to obtain it. The explicit school intent in contrast is, "We get you through your high-stakes test, award you your credit, and we've done our job. Feel free to discard your learning after that if you wish."

To prepare students for an adult life of the mind, first have them **master a body of knowledge**. When they have done at least that, they might see what they can do with processes labeled as creative and critical. The easiest way to exceed the reach of the giants is to stand on their shoulders. A couple of adjustments could make a huge difference: 1) Stop telling students when they will be tested. Administer all tests large and small without warning. 2) Draw test material from any subject taught in the last two years. 3) Students score-of-record for any section of any course is the last score they received on it.

7. Do I think and talk about what I know? We obtain a clue about students' knowledge by how they can talk about what they study. Because they want to be competent in what they undertake, and because the standard that matters most to them is peer admiration, we need to design their learning experience so that they constantly explain what they know to their peers.

We kick off higher motivation for such talk by daily, impromptu, stand-up performances. About anything they have studied to learn and claim to know, put all such questions in a bin. Draw a student's name and a question. The student pops to his feet, answers the question for a minute or two, and sits down to peer applause.

If they never talk about their learning on their own and we wonder why, the answer is simple. We insert material into their conversational stream only by inserting it into their learning experience. While project learning adds to such conversation, much material adapts to a simpler vehicle: Carve down the entire curriculum to daily pieces they explain to each other in partner pairs until they can explain the whole course beginning to end. A peer receiving their explanation respectfully dignifies their learning as worthy and respectable.

Conclusion

In sum, the first context of critical thinking is the condition of the thinker. We first love and cherish children, make them emotionally safe, and do not add to their stress. We help them balance their feelings and manage them constructively. Then we reasonably add, "Cast your net broadly. Learn a lot and have confidence in what you know. Be able to express it, learn from others, and think about it."

With these minimums, they at least have their hand on the doorway into an adult life of the mind.

John Jensen is a licensed clinical psychologist and author of the three-volume Practice Makes Permanent series, published by Rowman and Littlefield, that expands on the ideas above. He will email the proofs of the series to anyone on request. Contact: jjensen@qci.net.

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