ESSAY 6

THE EXPERTISE TRAP

When Deep Knowledge Becomes the Enemy of Learning

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When Deep Knowledge Becomes the Enemy of Learning

The subject matter expert often makes the worst teacher. Not because they can't teach or don't care. Because they've forgotten what it's like not to know.

SYNOPSIS:
We assume expertise is the foundation of great teaching. It's actually an obstacle. The deeper someone's knowledge becomes, the more automatic their thinking grows, until they literally cannot access the cognitive steps that novices need most. This is the expertise trap: a cognitive blind spot where mastery erases memory of the learning journey. Research shows experts consistently overestimate what beginners understand, skip crucial intermediate steps, and communicate in ways that make perfect sense to themselves but confound learners. Unlike the credibility deficit—where trainers lack lived experience—the expertise trap strikes those who have the most experience. Their knowledge has become so compressed that they've lost conscious access to how they learned it. AI changes this dynamic completely. It doesn't suffer from the curse of knowledge and can break expertise into granular steps infinitely. The question isn't whether experts should teach. It's how we help them overcome the very expertise that makes them valuable.

The Paradox Nobody Talks About

> Here's the uncomfortable truth:
> the person most qualified to teach something
> is often the worst person to teach it.

A senior engineer who debugs complex systems in her sleep cannot remember what it felt like to stare at code that looked like hieroglyphics. A sales director who closes million-dollar deals through intuition has forgotten that negotiation tactics once seemed impossibly complex. They have mastered their craft so thoroughly that the knowledge has become automatic, unconscious, invisible. And that invisibility creates a chasm between expert and learner that no amount of goodwill can bridge.

This isn't the credibility deficit—where facilitators lack lived experience. The expertise trap afflicts those drowning in lived experience. They have the scars. They've done the work. But something strange happens on the journey to mastery: *the path you took becomes hidden from your own view.*

What Happens When Knowledge Becomes Invisible

In 1989, economists Colin Camerer, George Loewenstein, and Martin Weber coined the term "curse of knowledge" to describe a cognitive bias where informed individuals cannot accurately reconstruct what it's like to be uninformed. Once you know something, you cannot "un-know" it. You cannot return to the mental state of not knowing. The implications for learning are devastating.

When you first learn to drive, every action demands conscious attention. Check the mirror. Turn the key. Put your foot on the brake. Each step exists as a discrete, deliberate decision. But after years of driving, you execute hundreds of micro-decisions automatically while having a conversation and thinking about your afternoon meeting. The knowledge has compressed. The steps have disappeared.

Now imagine teaching someone to drive. An expert says, "Just ease into the intersection and merge smoothly when there's an opening." To them, this instruction is clear. To a novice, it's meaningless. When is there "an opening"? How do you "ease"? The expert has lost conscious access to the intermediate steps their brain processes automatically. They literally cannot tell you what they're doing because they're no longer aware they're doing it.

The Research Is Clear: Expertise Blind Spots

In a Stanford experiment, researcher Elizabeth Newton divided participants into "tappers" who tapped out well-known songs and "listeners" who tried to identify them. Tappers predicted 50% success. The actual rate? Three percent. The tappers could hear the melody in their heads. The listeners just heard random noise. The knowledge gap was so large that tappers couldn't imagine what it was like not to know.

The conclusion from decades of cognitive science research is unambiguous: *expertise fundamentally changes how your brain processes information, and these changes make it harder—not easier—to teach beginners.*

The Difference Between Having Experience and Teaching It

This is where the expertise trap diverges from the credibility deficit. Both create distance between teacher and learner, but in opposite ways: Essay 4 addressed trainers who lack the scars—they've never carried the weight of the work they're teaching. This essay addresses practitioners drowning in scars—they've done the work so thoroughly that their expertise has become invisible even to themselves. One fails because the teacher hasn't walked the path; the other fails because the teacher can no longer remember what walking that path for the first time actually felt like.

The *credibility deficit* occurs when the person teaching has never done the work. They can explain frameworks but cannot share the messy reality of application. Learners sense this lack and emotionally detach. The *expertise trap* occurs when the person teaching has done the work so thoroughly they've forgotten what it's like not to know how. They have more wisdom than they can consciously access. The teaching fails because that wisdom has become invisible to the teacher themselves.

One is a problem of too little experience. The other is a problem of too much—or more precisely, experience that has transformed into automated competence without conscious awareness. Both create the same outcome: training that doesn't connect. But they require *different solutions*.

Why We Keep Falling Into It

Organizations persist in equating subject matter expertise with teaching ability for understandable reasons. Who else would design sales training if not top salespeople? Who else would build technical certifications if not senior engineers? The logic seems airtight—right up until the moment the expert tries to explain something that has become automatic.

We've also built measurement systems that reinforce the trap. When evaluating training, we ask: "Is the content accurate?" "Does it reflect best practices?" We rarely ask: "Can a novice actually learn from this?" "Has the expert successfully decompressed their automated knowledge into learnable steps?"

> We optimize for expertise in the content while ignoring expertise in the teaching. Then we wonder why completion rates are high but behavior change is low.

How AI Transforms the Trap

Here's what changes everything: AI doesn't have the curse of knowledge. It hasn't traveled the learning journey, so it hasn't forgotten the steps. When an AI system teaches negotiation skills, it doesn't skip the part about managing emotional reactions because that process has become automatic—it never was automatic.

More importantly, AI can take an expert's compressed knowledge and decompress it infinitely. An expert might explain a concept one way. AI can generate fifty different explanations, each tailored to where a specific learner is stuck. It can identify the exact intermediate step a learner is missing and provide targeted support without the expert needing to consciously recall that step exists.

AI can also make expert thinking visible in ways experts cannot do themselves. By analyzing how experts solve problems, AI systems can surface the implicit decisions, the pattern recognition, the intuitive leaps that experts make unconsciously. Then it can break those into teachable steps. That's how IBM's Watson analyzes expert decision-making in medical diagnosis, identifying not just what experts conclude but how

they got there—which symptoms they weighted heavily, what patterns they recognized, what possibilities they ruled out first.

This doesn't mean AI replaces expert teachers. It means AI can help experts overcome their own expertise. The combination—expert wisdom plus AI's ability to decompress and personalize it—creates something neither could achieve alone.

What Organizations Can Do Today

You don't need AI to start addressing the expertise trap:

Pair experts with instructional designers who aren't experts. Google discovered that the best training emerged when subject matter experts collaborated with designers who asked "stupid" questions. Those questions forced experts to unpack assumptions, articulate implicit steps, and translate jargon.

Conduct an "obviousness audit." For every critical learning program, have someone with zero background knowledge review the first hour of content. Every time they don't understand something, that's evidence of the expertise trap.

Record experts doing the actual work, not explaining it. When you record them actually working and capture their thinking out loud, you surface the hidden steps. That raw footage becomes training gold because it reveals what experts cannot consciously articulate.

Build "confusion catalogs" from learner questions. Track every question learners ask during training. Patterns emerge showing exactly where expert explanations disconnect from novice understanding.

Test training on people for whom it isn't designed. Before launching sales training for new hires, test it on engineers. If someone from

outside the domain can follow the logic, you've successfully overcome the expertise trap.

Create "translation pairs"—expert plus recent learner. Instead of having experts develop training alone, pair each with someone who learned the skill within the past six months. The expert provides depth. The recent learner ensures clarity.

Use recent learners as co-teachers. Companies like Stripe involve employees who learned the skill within the past year to help design training. These "advanced novices" still remember the struggle points and the steps that experts skip.

The Hard Truth

The expertise trap is humbling because it reveals that the very thing that makes someone valuable—*deep mastery*—also makes them less capable of sharing that mastery. Your best engineer probably shouldn't design engineering onboarding alone. Your top salesperson likely needs help translating their intuitive brilliance into teachable steps.

> This doesn't mean experts shouldn't be involved in training: *it means we need to stop assuming that subject matter expertise equals teaching expertise.* They're different skills. Often inversely related.

The measurement infrastructure we've built can't capture this trap because it asks the wrong questions. "Is this expert-level content?" Yes. "Was it developed by someone with credentials?" Yes. But the question we should ask—"*Can someone who knows nothing learn from this?*"—rarely gets asked until after the training fails.

The Choice Before Us

We can continue pretending that expertise automatically translates into teaching ability. We can keep putting our most knowledgeable people in front of learners and wondering why the knowledge doesn't transfer. We can blame learners for not "getting it" when the real problem is that experts have forgotten what "getting it" requires.

Or we can acknowledge the trap and design around it. We can pair experts with people who bridge the gap. We can use technology to decompress automated knowledge. We can build systems that surface the invisible steps experts skip. We can measure not just whether training is accurate but whether it's learnable.

The organizations that thrive won't be the ones with the most expertise. They'll be the ones who figure out how to share that expertise despite the cognitive barriers mastery creates.

When you think about the best teacher you ever had, were they the person who knew the most? Or were they the person who remembered what it was like not to know, who could meet you where you were, who made complexity feel accessible? That's not an accident. That's someone who overcame the expertise trap—or never fell into it.