

Why Students Engage — or Don't: Expectancy, Value, and Cost in the AI Classroom

A Practical Primer for Educators on the Motivational Forces That Shape Whether Students Choose to Do the Hard Work of Learning

What Is Expectancy-Value-Cost Theory?

Expectancy-Value-Cost theory holds that a student's motivation to engage in a task is determined by three forces: whether they believe they can succeed (*expectancy*), whether they believe the task is worth doing (*value*), and what they believe it will cost them in time, effort, or opportunity (*cost*). AI reshapes all three — often in ways that quietly undermine genuine engagement.



Expectancy

"Can I do this?" A student's belief in their own ability to succeed. When expectancy is too low, students disengage before trying. When AI inflates it artificially, students never develop the genuine competence that sustains it.



Intrinsic Value

"Do I find this interesting?" Enjoyment of the task itself. The deepest and most durable form of motivation — but the one most easily displaced when AI removes the challenge that makes mastery feel meaningful.



Utility Value

"Will this matter to me?" The perceived usefulness of a skill or concept for future goals. Students who cannot see a connection to their lives or ambitions will seek the fastest path to completion — often AI.



Cost

"What will this require of me?" The perceived effort, time, and opportunity cost of engaging. AI dramatically lowers perceived cost — which sounds helpful but removes the investment that gives learning its meaning and durability.

The Evidence: Why It Matters



Motivation Predicts Engagement

Expectancy and value are among the strongest predictors of whether students choose to engage deeply, persist through difficulty, and pursue further learning — independent of ability. A student who believes they can succeed and that the work matters will outlearn a more capable but disengaged peer.



The Cost Trap

When perceived cost drops to near zero — as AI makes possible — students do not engage more deeply. They engage less. Research shows that effort investment is part of what signals value to the learner: tasks that cost nothing tend to feel worth nothing.



Competence Requires Experience

Expectancy built on genuine achievement is durable and generative. Expectancy built on AI-assisted performance is brittle — it collapses the moment the tool is removed. Only real struggle produces the track record of success that builds authentic self-efficacy.

Expectancy-Value-Cost in Practice

Subject Area	The Motivational Risk	The Learning Goal at Stake	AI Redirect Strategy
STEM	AI lowers cost so dramatically that students never experience the satisfaction of solving a hard problem — eliminating the intrinsic value of mathematical competence	Genuine self-efficacy in reasoning, built through a real track record of effortful success	Require a written "attempt log" before AI access — students document what they tried, building a visible record of their own capability
English / ELA	Students with low expectancy use AI to avoid the exposure of a first draft — never discovering that they are capable of original thought	Writer's identity and the confidence that comes from producing and revising one's own ideas	Use AI to respond to a student's draft with affirming questions about their thinking — building expectancy through genuine engagement, not praise
Social Studies	Students who see no utility value in historical thinking use AI to complete tasks transactionally — output without engagement	Civic identity and the understanding that historical reasoning has direct relevance to present-day decisions	Frame tasks around genuine current connections first; AI is used to deepen the student's own position, not replace the need to form one
Science	AI reduces the cost of lab reports and analysis so much that students never experience the curiosity-driven value of scientific discovery	Scientific identity and intrinsic interest in how the natural world works	Student records a genuine prediction and personal reaction to results before any AI is used — preserving the motivational arc of inquiry

Subject Area	The Motivational Risk	The Learning Goal at Stake	AI Redirect Strategy
World Language	Instant translation eliminates both the cost and the reward of communication — students never experience the intrinsic value of being understood in another language	Communicative confidence and the identity shift that comes from genuine cross-cultural connection	Design low-stakes real communication tasks where success is visible and personal — AI used only to debrief, never to perform

The Teacher's Role: Building Genuine Motivation

⚠ Watch for These Patterns

Students who complete tasks quickly but cannot connect them to anything they care about. Students who express confidence while demonstrating no independent capability. Chronic avoidance of challenging tasks whenever AI access is available.

✅ Motivational Strategies

Connect tasks explicitly to student goals and identities before assigning them. Celebrate effort and process visibly, not just correct outcomes. Design tasks where the cost of genuine engagement is worthwhile — where students can feel the payoff of doing hard work themselves.

The Golden Rule of Motivation: A student who uses AI to eliminate the cost of a task has also eliminated its reward. Competence feels good precisely because it was earned. Our job is not to make learning feel easy — it is to make the effort feel worth it, and then to protect the student's opportunity to feel that for themselves.

Discussion Questions for Educators

- Expectancy vs. AI-Assisted Confidence:** How do you distinguish between a student whose self-efficacy is built on genuine capability and one whose confidence depends entirely on tool access?
- The Cost Trap:** In which assignments has AI reduced the perceived cost so dramatically that students are completing work without any real investment — and how might that be redesigned?
- Utility Value and AI:** If students believe AI will always be available to do this kind of thinking for them, how does that change their perceived utility of learning it themselves — and how do we respond?
- Intrinsic Value at Risk:** Which tasks in your subject carry the greatest potential for genuine intrinsic interest — and how do we protect that interest from being short-circuited by AI-generated completion?
- The Golden Rule:** If AI eliminates both the cost and the effort of a task, what remains for the student to feel proud of? How do we design for the experience of earned success?

AI Scaffolding Prompt Templates for Your Students

The "Why Does This Matter?" Prompt (Any Subject)

Goal: Build utility value by connecting the task to the student's own goals before they engage.

"I am working on [Insert Task]. My personal goals or interests are [Insert]. Without doing the task for me, help me identify two specific ways this skill or concept could connect to something I actually care about — so I understand why it's worth the effort."

The "Attempt First" Prompt (STEM / Writing)

Goal: Protect genuine expectancy by ensuring the student's own effort comes before any AI input.

"Here is my first attempt at [Insert Task]: [Insert Work]. I tried this approach because [Insert Reasoning]. Do not rewrite or complete my work. Tell me one thing my attempt shows I already understand, and ask me one question that helps me take the next step myself."

The "Effort Reflection" Prompt (General Reflection)

Goal: Make the cost of genuine engagement visible and meaningful — reinforcing that effort has value.

"I just finished [Insert Task]. Here is what I found hardest: [Insert]. Here is what I figured out on my own: [Insert]. Ask me two questions that help me see how the effort I put in changed what I now understand — not just whether my answer was correct."

The "Identity Bridge" Prompt (Any Subject)

Goal: Strengthen intrinsic value by helping students see themselves as capable thinkers in this domain.

"I completed [Insert Task] mostly on my own. Here is the part I'm most proud of: [Insert]. Do not evaluate my work. Instead, reflect back to me what this attempt suggests about my thinking — and ask me what I would do differently now that I know I can do this."