

# AI in Education: Navigating the Performance-Capability Paradox

Educational AI creates a paradox: immediate productivity gains mask the long-term atrophy of critical thinking and problem-solving skills. Institutions must redesign learning experiences to build resilience.

## THE HIDDEN COSTS OF AI INTEGRATION

### The Performance-Capability Paradox



Tools enhancing immediate output often undermine the foundational cognitive skills required for sustained performance.

### Assessment Validity Erosion



Traditional assessments fail as AI produces human-quality text, leaving educators unable to measure true student competency.



### The "AI Opportunity Gap"

Advantaged students use AI to amplify learning, while under-resourced students often use it to mask skill deficits.



30-50% reduction in faculty grading workload



10% increase in course pass rates (e.g., ASU)



Rapid AI-assisted module completion



Slower development of independent student writing skills



Weakened performance on timed, independent exams



Inability to transfer knowledge to novel, real-world situations

## BUILDING INSTITUTIONAL RESILIENCE

### Shift from Product to Process



Redesign assessments to evaluate thinking stages, oral defenses, and in-class applications that AI cannot replicate.

### Cultivate AI Literacy



Teach students to critically verify AI outputs and recognize when AI substitutes for vs. enhances thinking.

### Distributed Governance



Replace rigid, centralized bans with flexible, department-level policies that adapt as AI capabilities evolve.