How Generative AI is Reshaping Learning, Agency, and Equity in Higher Education Worldwide

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I wrote a book!

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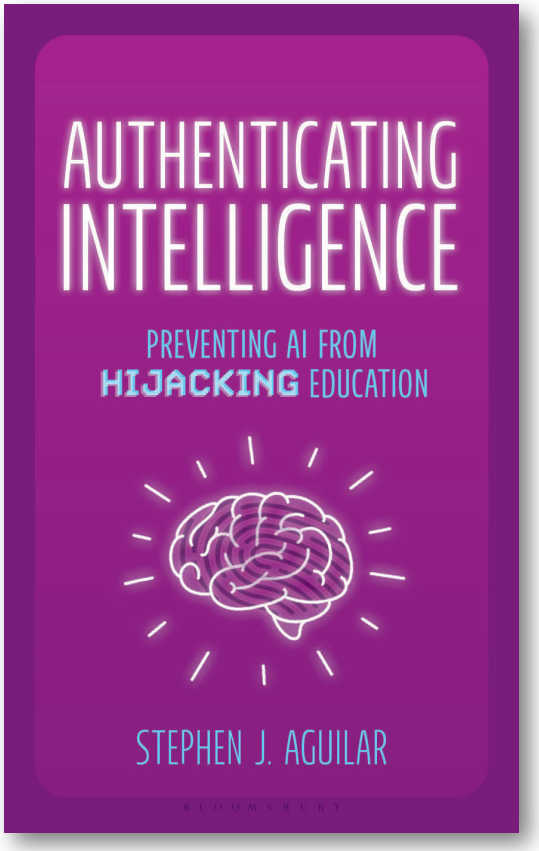

AUTHENTICATING
INTELLIGENCE
PREVENTING AI FROM
HIJACKING EDUCATION
STEPHEN J. AGUILAR
BLOOMSBURY

The plan for today

- **Framing our discussion:** The sociotechnical system
- **AI in College:** Why >1,000 students ask AI for help
- **AI Worldwide:** How teachers in the US, India, Qatar, Colombia, and the Philippines use use AI.

The sociotechnical system

The “Sociotechnical” System

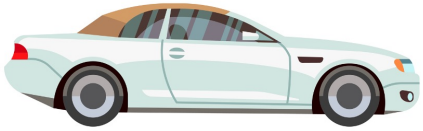
Technology

Context

People

The “Sociotechnical” System

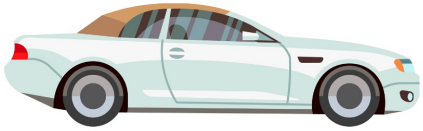
Technology



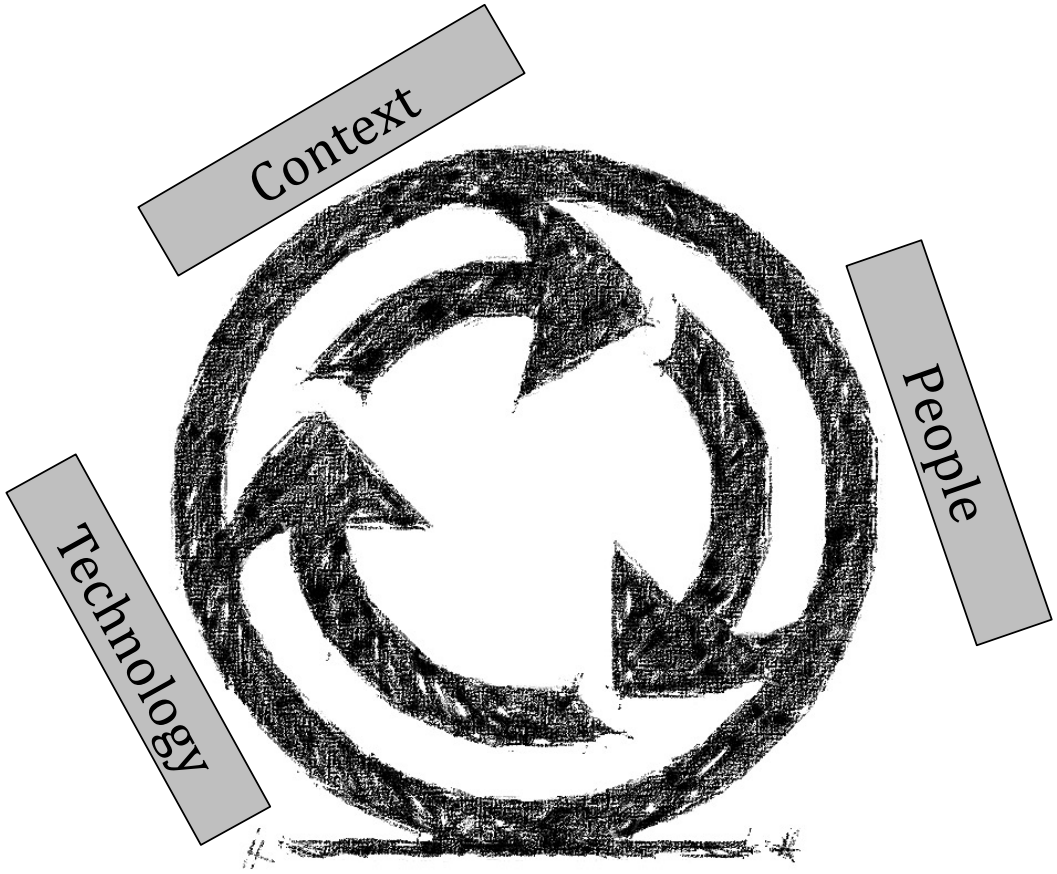
Context

People

The “Sociotechnical” System

Technology	Context	People
		
		

The “Sociotechnical” System



Why College Students Seek Help from AI

Research Questions

- **RQ1** What factors predict instrumental GenAI help-seeking? (i.e., AI used used as a tool, or "instrument."

- **RQ2** What factors predict executive GenAI help-seeking? (i.e., AI used to "do the thinking")

Sample

- N = 1,015 US college students (41% male, 57% female).
- 14% first-year students, 21% second-year students, 27% third-year students, 29% fourth-year students, and 7% fifth-year and above.
- The sample was 62% White, 15% Black, 15%, Hispanic/Latino, 12% Asian, 6% mixed race, 1% Indian/Native American, and 0.2% Hawaiian/Pacific Islander.

Measures

- **Academic Help-Seeking in the Age of GenAI Scales** (α = 0.75; Adapted from Karabenick, 2003)
  - **Purpose:** Compares help-seeking across 5 sources (Instructor, Peer, Tutor, Internet, GenAI).
  - **Subscales:** Instrumental, Executive, Threat, Avoidance.

- **Perceived Competence for Learning Scale** (α = 0.92 ; Williams & Deci, 1996)
  - **Purpose:** Assesses perceived academic self competence.

- **Help-Seeking Self-Efficacy Scale** (α = 0.84–0.91; Adapted from Keeler & Siegel, 2016)
  - **Purpose:** Measures self-efficacy in seeking help from various sources.

- **Additional Single-Item Measures**
  - Subsequent help-seeking preferences
  - GenAI usage frequency
  - Trust in GenAI content
  - Worry about GenAI reliance

Analytic Approach

Two multivariate regression models were conducted to identify significant predictors of GenAI usage.

- **Model 1:** Dependent variable was **Instrumental** GenAI help-seeking (mastery-oriented).
- **Model 2:** Dependent variable was **Executive** GenAI help-seeking (dependency-oriented).
- **Key Predictors Analyzed:**
  - ***Habits*:** Prior internet help-seeking and peer help avoidance.
  - ***Attitudes*:** GenAI self-efficacy, trust in content, and perceived competence.
  - ***Context*:** Professor encouragement and average GenAI usage frequency.
  - ***Interaction Effects*:** Specifically examined how **trust** interacts with **competence** and **professor encouragement** to shape help-seeking behaviors.

Results

- **Instrumental Help-Seeking (Agency)** (R^2 = .65)
  - Positively predicted by existing instrumental internet search habits, avoidance of help from peers, and professor encouragement.
  - Students with high internet *self-efficacy* were less likely to use GenAI instrumentally.
  - Students with both high trust in AI and high perceived competence engaged in the most instrumental help-seeking.
- **Executive Help-Seeking (Reliance)** (R^2 = .50)
  - Positively predicted by high trust in GenAI content, worry about GenAI reliance, and Pell grant recipient status.
  - Negatively predicted by perceived competence (feeling capable in the course) and internet self-efficacy.
  - Professor encouragement reduced executive help-seeking specifically for students with **high trust** in the tool.

So what?

When do students use AI to *learn* (Instrumental)?

Habit Transfer: If they already use Google to learn, they use AI to learn.
Social Safety: If they are afraid to ask classmates for help, they turn to AI instead.
Teacher Influence: When professors encourage AI use, students use it more productively.
Trust + Skill: The most productive users are those who trust the tool *and* feel confident in their own abilities.

When do students use AI to *cheat/outsource* (Executive)?

Blind Trust: The more they trust the AI's accuracy, the more likely they are to just ask for the answer.
Low Confidence: Students who feel they aren't good at the subject are more likely to outsource the work.
The "Safety Net": Encouragement from professors actually *lowers* this dependency-focused behavior for students who highly trust the tool. (HAVE AI GUIDELINES)

AI Use Among Teachers Worldwide

Research Questions

RQ1: What predicts positive beliefs about GenAI's impact on teaching and learning from teachers?

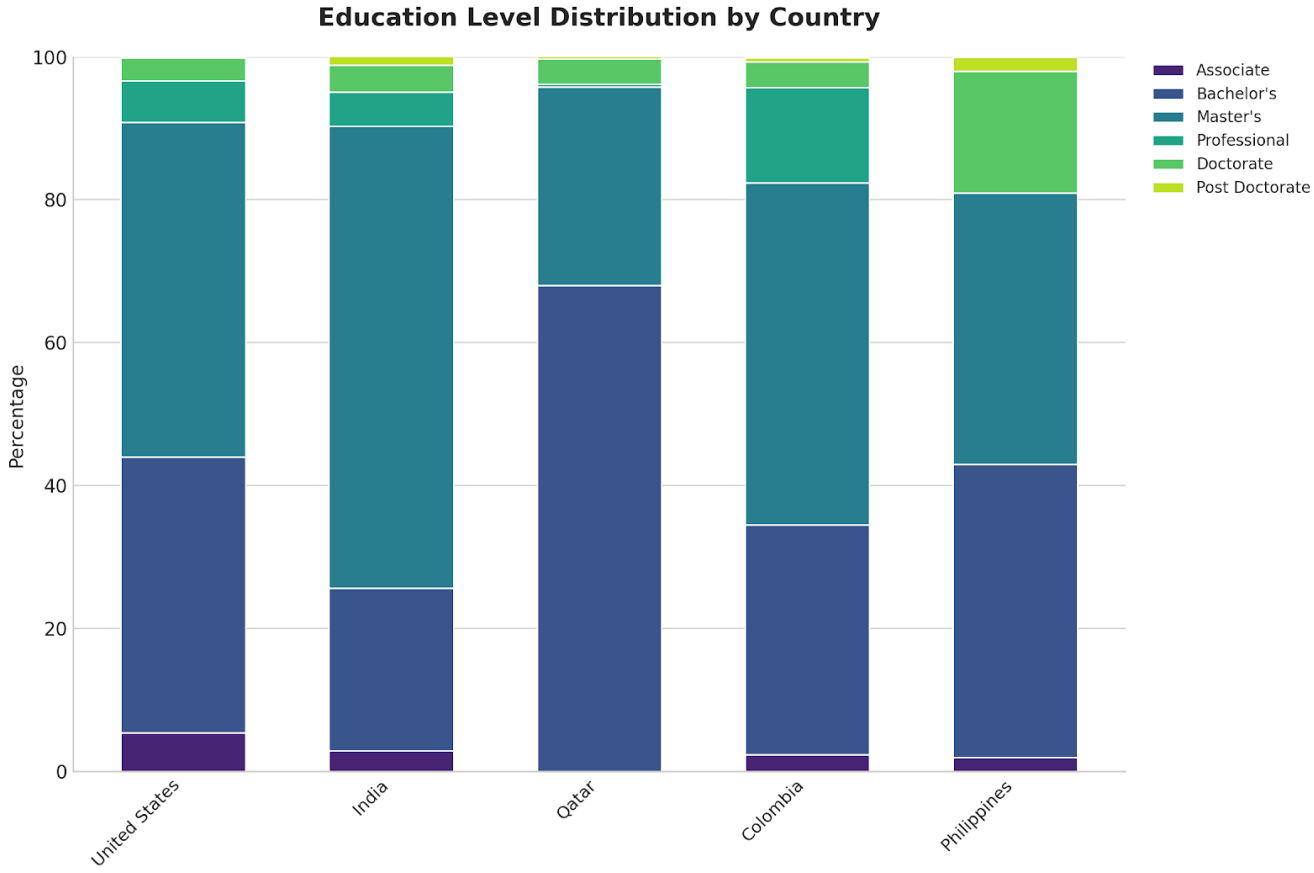
RQ2: What factors explain concerns about GenAI increasing *plagiarism* or decreasing student *creativity* from teachers?

RQ3: Do these beliefs vary across countries?

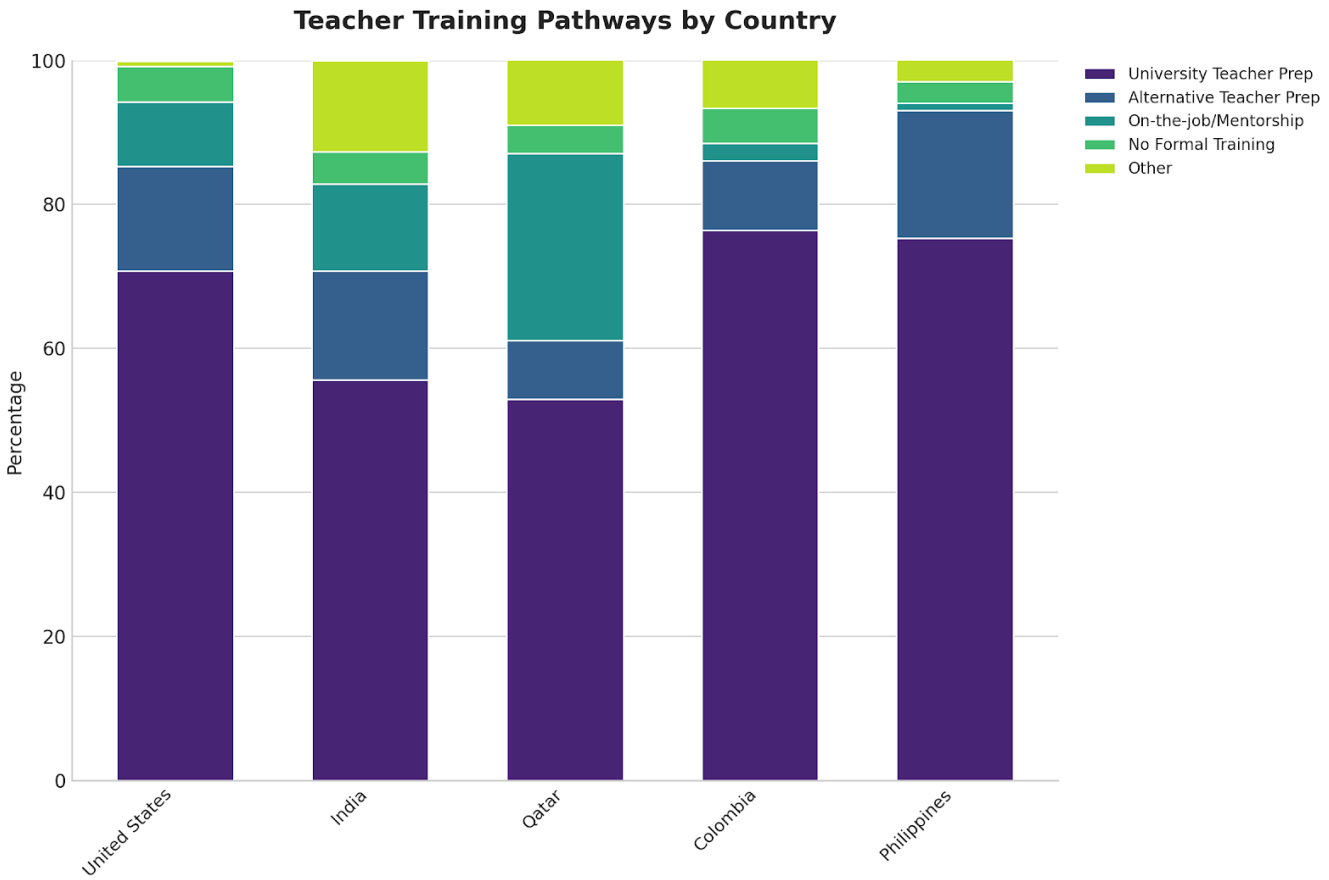
Sample

- n= 1,401 K-12 teachers across 5 countries.
  - United States (n=539)
  - India (n=316)
  - Qatar (n=284)
  - Colombia (n=165)
  - Philippines (n=101).

Sample


Education Level Distribution by Country
Percentage
100
80
60
40
20
0
United States
India
Qatar
Colombia
Philippines
Associate
Bachelor's
Master's
Professional
Doctorate
Post Doctorate

Sample


Teacher Training Pathways by Country
Percentage
100
80
60
40
20
0
United States
India
Qatar
Colombia
Philippines
University Teacher Prep
Alternative Teacher Prep
On-the-job/Mentorship
No Formal Training
Other

Measures

AI Readiness (AIR): A composite of awareness, confidence, and perceived usefulness (α = .71).

Positive AI Impact Beliefs (PAIB): Beliefs that AI improves learning, teaching, and equity (α = .81).

Contextual Factors: Institutional Support (school environment) and Teacher English Proficiency (TEP).

Concerns: Plagiarism Concern and Creativity Concern.

Analytic Approach

- Three multiple regression models were used to predict:
  - **RQ1: Positive AI Impact Beliefs** (R^2 = .50)
  - **RQ2: Plagiarism Concerns** (R^2 = .07).
  - **RQ2: Creativity Concerns** (R^2 = = .06).
- **Controls:** Country (RQ3), age, gender, teaching experience, and education level.

Results

- **Predictors of Optimism:**
  - **AI Readiness** was the strongest predictor of positive beliefs, followed by **Institutional Support**.

- **The Creativity Paradox:**
  - Higher AI Readiness and higher Behavioral Use significantly predicted **greater** concern about loss of student creativity.

- **Country Differences (Relative to the USA):**
  - Teachers in **India** reported significantly higher positive beliefs;
  - Teachers in **Qatar** reported significantly higher plagiarism concerns

So what?

Support Fuels Buy-In

Teachers only view AI positively if they feel competent (trained) and backed by their school administration.

The "Informed Skeptic"

The teachers who use AI the most are the *most* worried about it hurting student creativity. They understand the tool's limits.

Context Drives Fear

Anxiety about cheating (plagiarism) isn't driven by the technology itself, but by the specific country's academic culture and policy environment.

Book information, Newsletter, Podcasts, and more!

Thank you!