



AI IN EDUCATION: AI ACROSS THE DISCIPLINES

RODRIGO GOMEZ, II&E

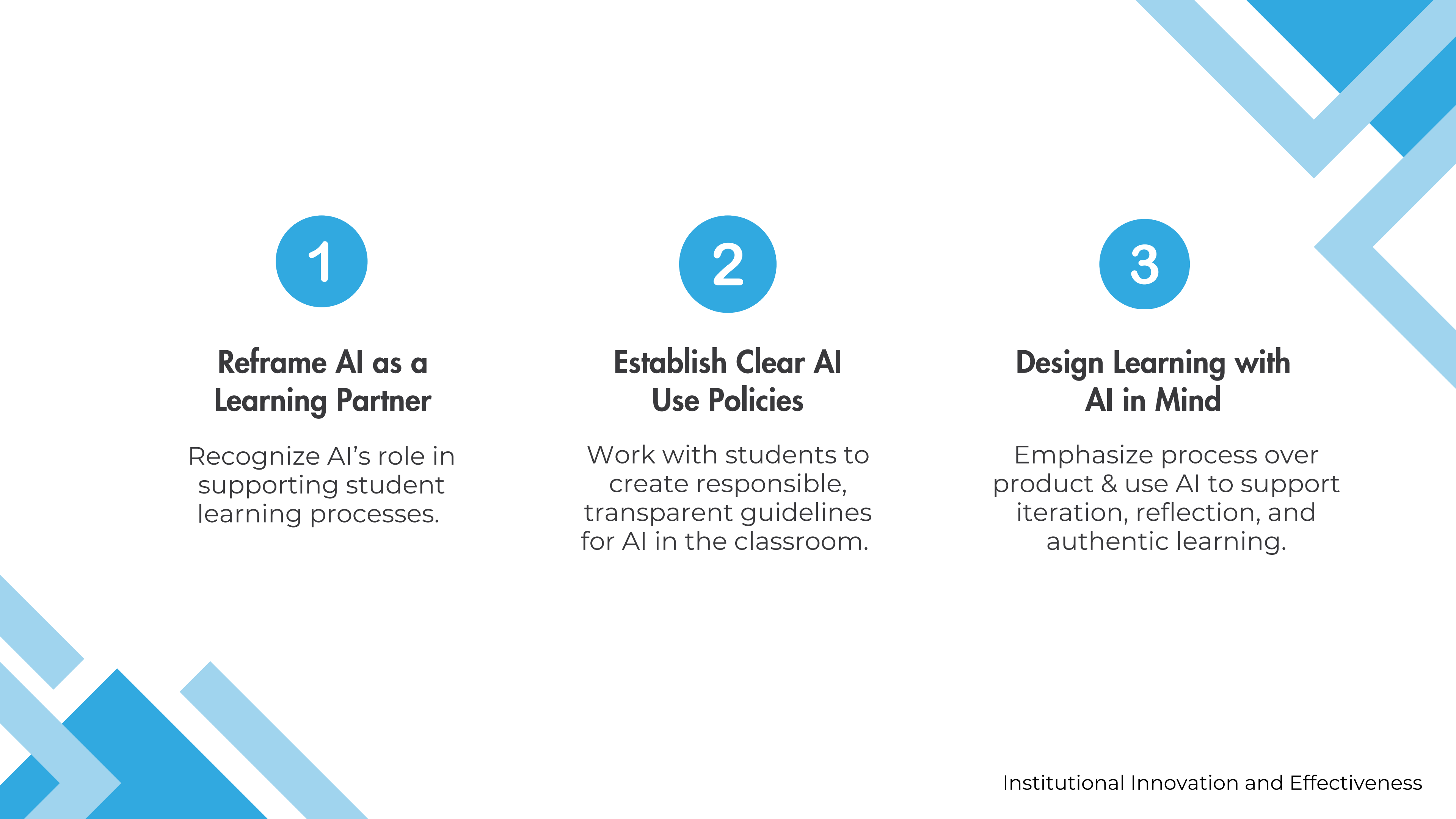
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RODRIGO GOMEZ

**FACULTY SPECIALIST FOR EMERGING TECHNOLOGY,
FULL PROFESSOR OF ENGLISH, MIRAMAR COLLEGE**

I have a passion for rhetoric, pedagogy, and poetry. I also maintain a keen interest in gamification, edtech, and web3 technologies, like artificial intelligence (AI), blockchain, and the metaverse--particularly in how they can make education more accessible, engaging, relevant, and impactful for students.



1

Reframe AI as a Learning Partner

Recognize AI's role in supporting student learning processes.

2

Establish Clear AI Use Policies

Work with students to create responsible, transparent guidelines for AI in the classroom.

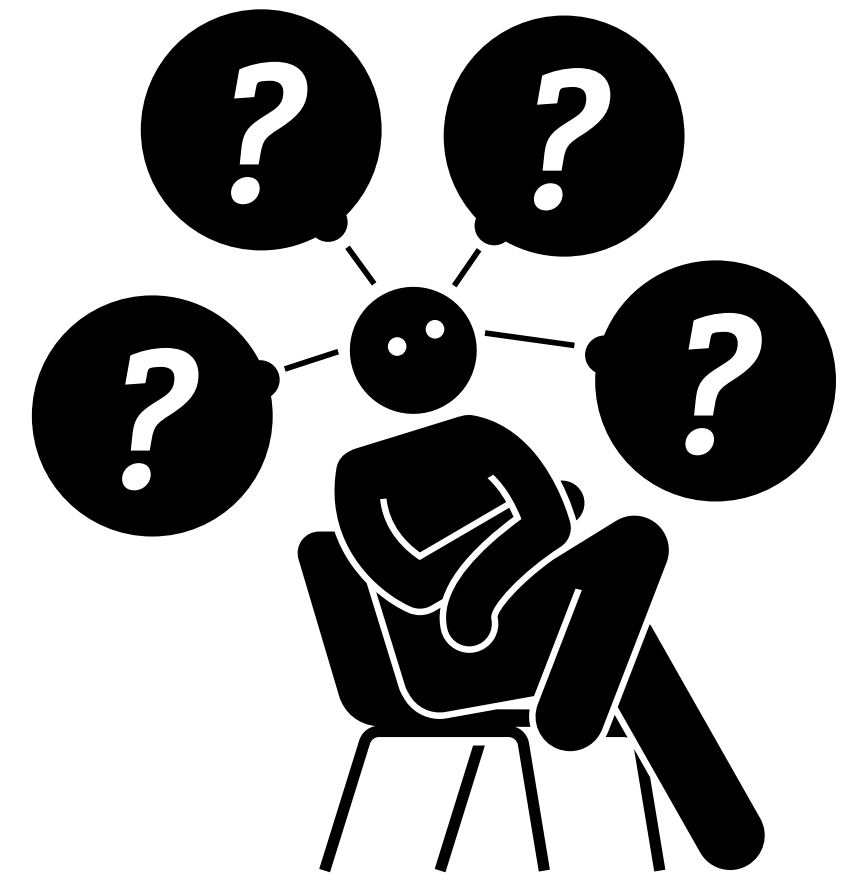
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Design Learning with AI in Mind

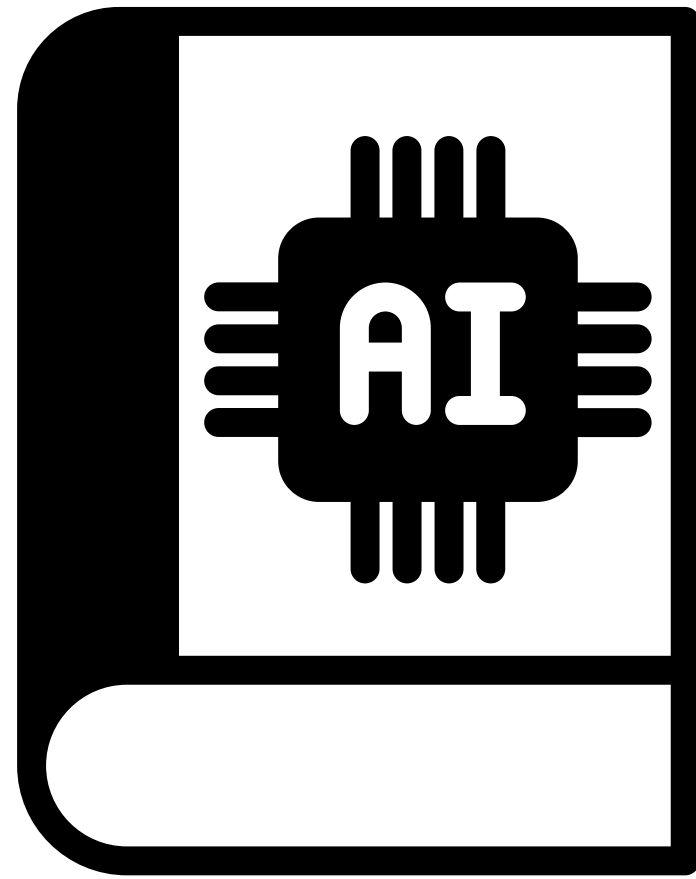
Emphasize process over product & use AI to support iteration, reflection, and authentic learning.

A.I in Education: Framing Questions

- 1. How is AI already shaping the future of my discipline—and what skills will my students need to thrive in it?**
- 2. How should I be engaging with AI myself—so I can model lifelong learning and guide others with clarity and confidence?**
- 3. What aspects of my course can be enhanced—not replaced—by AI to support deeper learning, critical thinking, or creativity?**
- 4. How can we train students to use AI ethically, transparently, and responsibly within their field—and co-create norms that support that goal?**
- 5. How can students use AI to solve real-world problems in their field, develop critical skills, and make meaningful contributions beyond the classroom?**



A.I Literacy: Understanding the Basics



AI Literacy is the ability to understand, use, and critically evaluate AI tools—recognizing their limitations, ethical implications, and societal impact.

AI Prompting is the practice of guiding AI tools using natural language to generate relevant, tailored responses—by giving clear instructions, questions, or examples aligned with the user's intent.

Ethical AI Usage emphasizes ensuring responsible and equitable use of AI in the classroom, focusing on privacy, bias, and academic integrity.

A.I in Education: Benefits & Risks



Instruction Support

Supports differentiated instruction and content generation.



Feedback Mechanism

Enables timely, personalized feedback and tutoring.



Creativity Enhancement

Sparks creativity, collaboration, and skill development.



Workflow Efficiency

Increases efficiency in administrative and teaching workflows.



Accessibility Aid

Helps bridge accessibility and equity gaps.



Plagiarism Risks

Raises concerns around plagiarism and academic honesty.



Data Privacy

Threatens student data privacy and informed consent.



Student Agency

May diminish student agency and authentic learning.



Social Biases

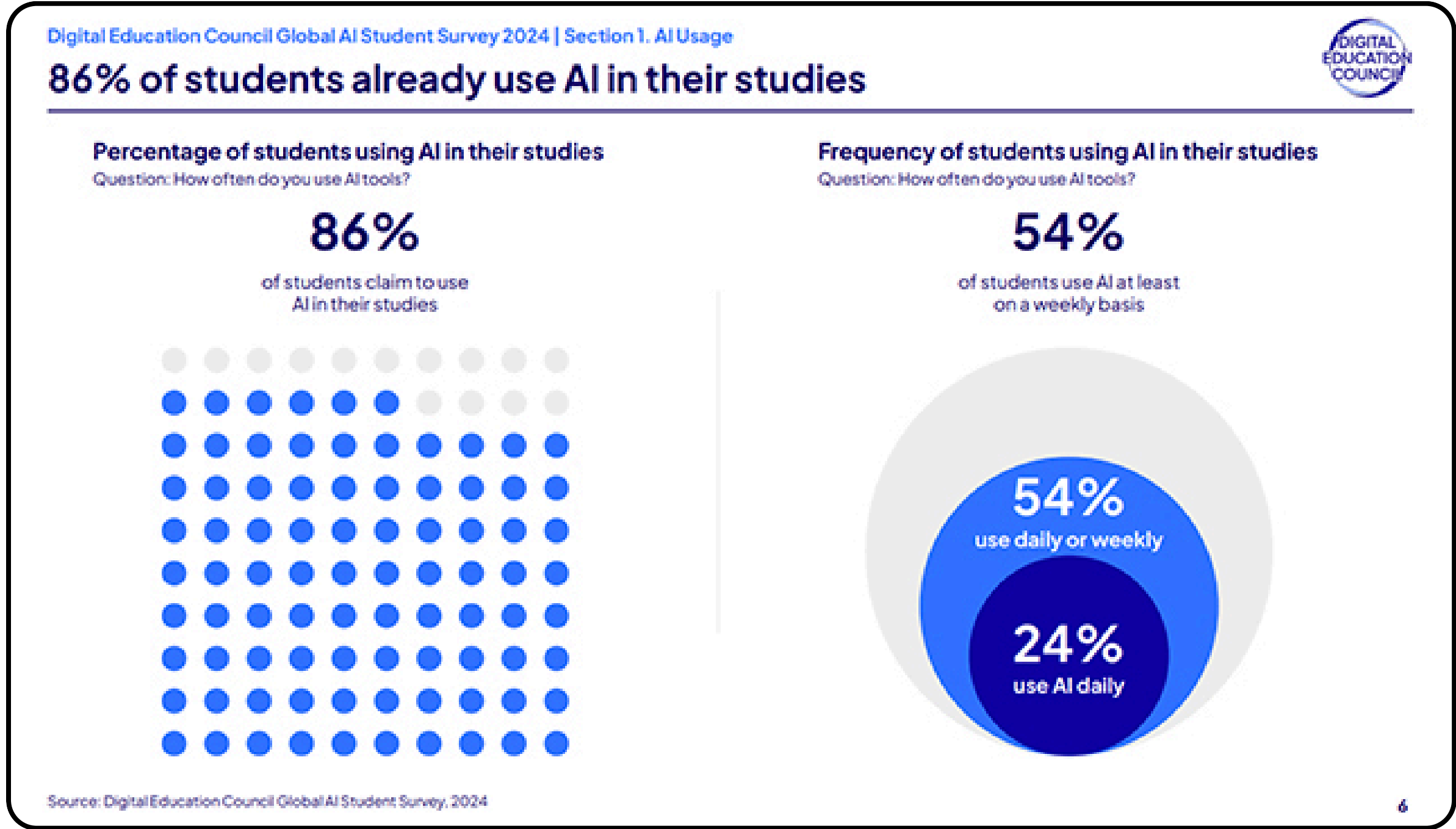
Can reinforce existing social biases and inequality.



Critical Thinking

Leads to overreliance and loss of critical thinking.

A.I in Education: The Current Landscape



3,839 responses
from bachelor,
masters, and
doctorate students
across 16 countries

A.I in Education: Starting the Conversation



“So, am I allowed to use A.I in this class?”

Why This Question Matters

- Some students are already using AI—*often without clear guidance.*
- Faculty approaches *vary widely*, creating confusion and inconsistency.
- Clear, collaborative policies *promote ethical, informed use.*

A New Opportunity

- Use the question to introduce AI literacy.
- Collaborate with students to build classroom norms.
- Treat uncertainty as a chance to shape shared values.

A.I in Education: A New Taxonomy



Bloom's Taxonomy Revisited

Use this table as a reference for evaluating and considering changes to aligned course activities (or, where possible, learning outcomes) that emphasize distinctive human skills and/or integrate generative AI (GenAI) tools as a supplement to the learning process.

All course activities and assessments will benefit from ongoing review given the evolving capabilities of GenAI tools.

Version 2.0 (2024)



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	Distinctive Human Skills	How GenAI Can Supplement Learning*
CREATE	Engage in both creative and cognitive processes that leverage human lived experiences, social-emotional interactions, intuition, reflection, and judgment to formulate original solutions	Support brainstorming processes; suggest a range of alternatives; enumerate potential drawbacks and advantages; describe successful real-world cases; create a tangible deliverable based on human inputs
EVALUATE	Engage in metacognitive reflection; holistically appraise ethical consequences of other courses of action; identify significance or situate within a full historical or disciplinary context	Identify pros and cons of various courses of action; develop and check against evaluation rubrics
ANALYZE	Critically think and reason within the cognitive and affective domains; justify analysis in depth and with clarity	Compare and contrast data, infer trends and themes in a narrowly-defined context; compute; predict; interpret and relate to real-world problems, decisions, and choices
APPLY	Operate, implement, conduct, execute, experiment, and test in the real world; apply human creativity and imagination to idea and solution development	Make use of a process, model, or method to solve a quantitative or qualitative inquiry; assist students in determining where they went wrong while solving a problem
UNDERSTAND	Contextualize answers within emotional, moral, or ethical considerations; select relevant information; explain significance	Accurately describe a concept in different words; recognize a related example; translate to another language
REMEMBER	Recall information in situations where technology is not readily accessible	Retrieve factual information; list possible answers; define a term; construct a basic chronology or timeline

*AI capabilities derived with reference to an analysis of the MAGE framework, based on ChatGPT 4 as of October 2023. See Zaphir, L., Lodge, J. M., Liscio, J., McGrath, D., & Khosravi, H. (2024). How critically can an AI think? A framework for evaluating the quality of thinking of generative artificial intelligence. arXiv preprint arXiv:2406.14769.

In the Age of AI, it is **Human Intelligence** that we should emphasize

The key is seeing **Artificial Intelligence** as a tool for supplementing learning

A.I in Education: Policies & Agreements

AI Policy – Artificial Intelligence (AI) is one of the emerging web3 tools that promises to shake up both the academic and professional landscape. Regardless of how you feel about it, learning to use it well is an emerging and valuable skill. That being said, you can expect to use AI in my classes (ChatGPT and Midjourney AI, at a minimum). Please be aware:

- If you provide minimum prompts, you will get low quality results. You will need to refine your prompts in order to achieve better outcomes. This will take work.
- Don't trust anything AI (ChatGPT) says. Assume facts it gives you are wrong unless you know the answer or can check it with another source. You will be responsible for any errors or omissions provided by the tool. It works best for topics you understand.
- Any use of AI tools must be acknowledged. Please be sure to include a paragraph at the end of any assignment that uses AI explaining what you used it for and the specific prompts you used to get your results. Failure to do so is in violation of academic honesty policies.

Teach AI

◆ Sample Student Agreement for AI Use

AI can help me learn better and is important for my future, so I promise to use it the right way and make smart choices.

1. I will use AI tools responsibly and will not use AI in a way that could harm myself or others.
2. I will only use AI to support my learning and will follow my school's rules and teacher's instructions on when and how to use AI on an assignment.
3. I will be honest about when I use AI to help with assignments, and I will not turn in work that is fully created by an AI as my own.
4. If I use AI, I will review its work for mistakes.
5. I will check with my teacher when unsure about what is acceptable.

✳ Sample language when reviewing your class syllabus: AI tools may be used for brainstorming or preliminary research, but using AI to generate answers or complete assignments without proper citation or passing off AI-generated content as one's own is considered plagiarism.

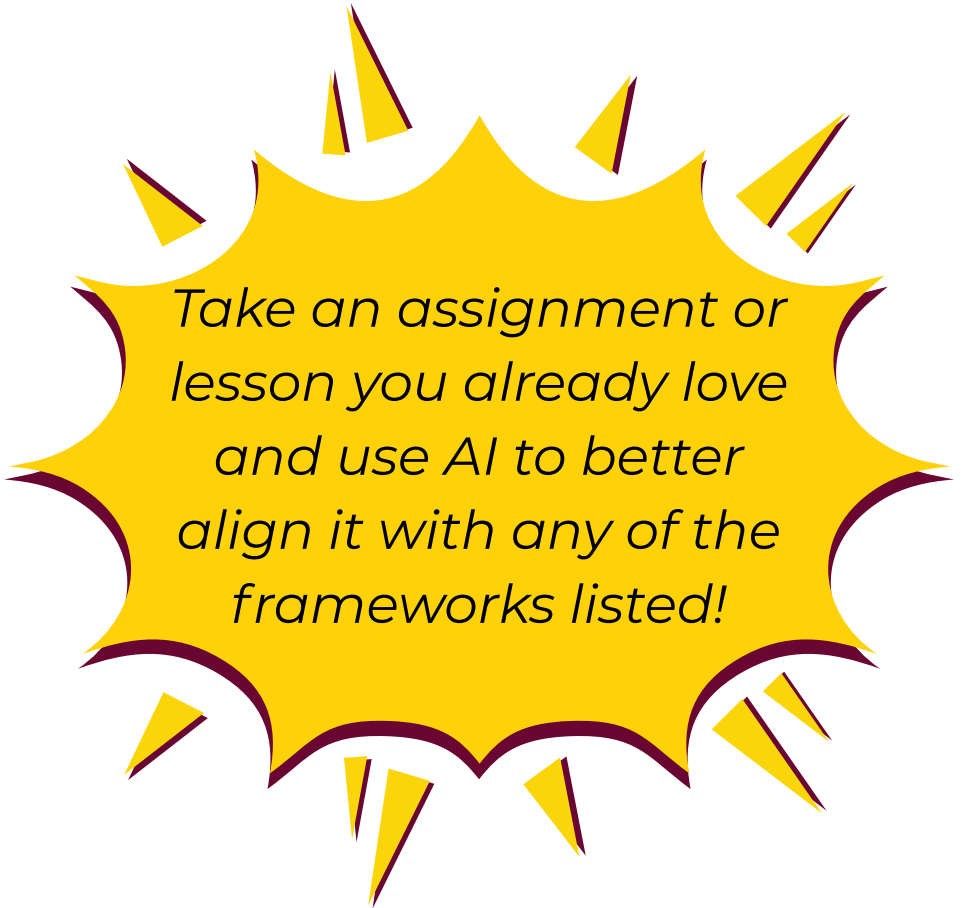


Tag them in! They're ready to engage in these critical topics!

A.I in Education: Adapting Content

- **Project-Based Learning (PBL):** An instructional approach where students engage in real-world, meaningful projects that require critical thinking, problem-solving, collaboration, and various forms of communication.
- **Culturally Responsive Teaching (CRT):** A pedagogy that recognizes the importance of including students' cultural references in all aspects of learning, aiming to make education more relevant and effective for diverse learners.
- **Social-Emotional Learning (SEL):** An approach that focuses on the development of self-awareness, self-control, interpersonal skills, and responsible decision-making, essential for success in school, work, and life.
- **Flipped Classroom:** A pedagogical model where the traditional lecture and homework elements are reversed. Students first explore new content at home, often via video, and then apply that knowledge in the classroom through interactive activities.
- **Inquiry-Based Learning:** A student-centered method of education that involves exploring questions, problems, or scenarios rather than presenting established facts or portraying a smooth path to knowledge.
- **Competency-Based Education (CBE):** An educational approach that focuses on students demonstrating mastery of skills and knowledge at their own pace, rather than progressing through courses based on time spent in class.
- **Critical Pedagogy:** A philosophy of education that encourages students to question and challenge domination, and the beliefs and practices that dominate, advocating for the development of critical consciousness.

Regardless of discipline one of AI's best use cases is adapting content to individual needs and learning styles.



Take an assignment or lesson you already love and use AI to better align it with any of the frameworks listed!

A.I in Education: Adapting Content (example)

Prompt

I'm looking to get started applying Chris Biffle's gamification and learning strategies into my college class. Please break down for me his key points, especially from works like "Whole Brain Teaching for Challenging Kids". Provide me a sample of games that I could create for an English college curriculum focused on storytelling, rhetorical analysis, and argumentation-- as well as critical thinking as a whole

Chris Biffle's "Whole Brain Teaching" (WBT) is a teaching strategy that emphasizes active learning, student engagement, and classroom management through gamification and interactive activities. Here are some key points from his approach, along with sample games that can be adapted for a college English curriculum:

Key Points:

1. Engagement through Movement:

- WBT encourages using gestures and movements to reinforce learning. This can help with memory retention and understanding.

2. The Big Seven:

- These are core techniques in WBT:
 - i. **Class-Yes:** A call-and-response to gain attention.
 - ii. **Mirror Words:** Students mimic the teacher's gestures and words to reinforce concepts.
 - iii. **Teach-Okay:** Students teach each other the material, reinforcing their understanding.
 - iv. **Scoreboard:** A simple game where students earn points for positive behavior and engagement.
 - v. **Hands and Eyes:** A signal to focus attention.
 - vi. **Switch:** Encouraging students to take turns teaching to foster engagement.
 - vii. **Brain Toys:** Activities like "Air Whiteboard" where students visualize concepts in the air.

3. Gamification:

- Using points, rewards, and competitive elements to motivate students.

4. Small Steps and Repetition:

- Breaking down complex concepts into manageable chunks and using repetition for mastery.

5. Collaborative Learning:

- Encouraging students to work together and teach each other.

6. Positive Reinforcement:

- Recognizing and rewarding positive behavior and participation.

A.I in Education: Imagining Assignments 2.0

Language Arts

A teacher uses AI to recommend reading materials that reflect students' cultural backgrounds. The curated list features diverse authors, creating a more inclusive and engaging experience while encouraging personal connections to the texts.

History

Students explore industrialization by comparing AI-generated narratives from diverse global perspectives—like a factory worker in England, a farmer in India, and an artisan in China—broadening their understanding through cultural contrast.

Algebra

An AI tutor adapts problem sets in real time based on student progress. Struggling with a concept like quadratic equations triggers scaffolded hints, visuals, and group learning opportunities informed by performance data.

Psychology

Students examine AI-generated case studies of mental health scenarios, practicing diagnosis and evaluating ethical concerns. They compare their responses to the AI's, fostering critical thinking about therapeutic methods and AI's limitations.

Visual Arts

Students use AI tools like Midjourney or Adobe Firefly to generate poster designs inspired by movements like Art Deco or Afro-Futurism. They reflect on how visual styles convey cultural meaning and explain AI's role in their creative process.

A.I in Education: From Product to Process

Learning Is a Recursive Process

Deep learning is recursive—it requires revisiting ideas, revising thinking, and adapting with feedback. AI tools can make this process more visible by offering immediate input, generating variations, and prompting iteration. The focus shifts from completing tasks to refining thought.

Why Process Matters

Prioritizing only polished work risks overlooking students' intellectual growth. Centering process values exploration, revision, and reflection. With AI, students can iterate ideas, test strategies, and build confidence in their thinking and decision-making.

Assessment Must Evolve

If learning is to remain authentic in the age of AI, assessment must also evolve. Grading could include the quality of engagement with tools—such as how well students prompted, revised, or reflected.

Assignments can ask for chat transcripts, prompt rationales, and annotations of AI input. These artifacts provide valuable insights into the student's decision-making and metacognitive development.

A.I in Education: Sound Strategies

 **Grade the Chat:** Require students to submit excerpts of their AI conversations alongside assignments. Assess the quality of their prompts, iteration, and reflection. This provides a lens into their thinking and tool literacy.

 **Revise Rubrics to Include Process:** Integrate criteria for planning, drafting, AI usage rationale, and revision. Reward intellectual curiosity and iterative effort.

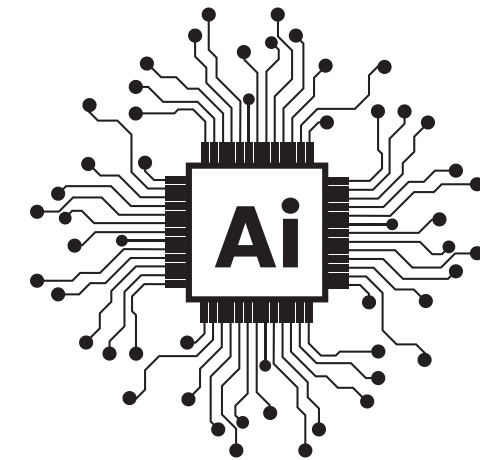
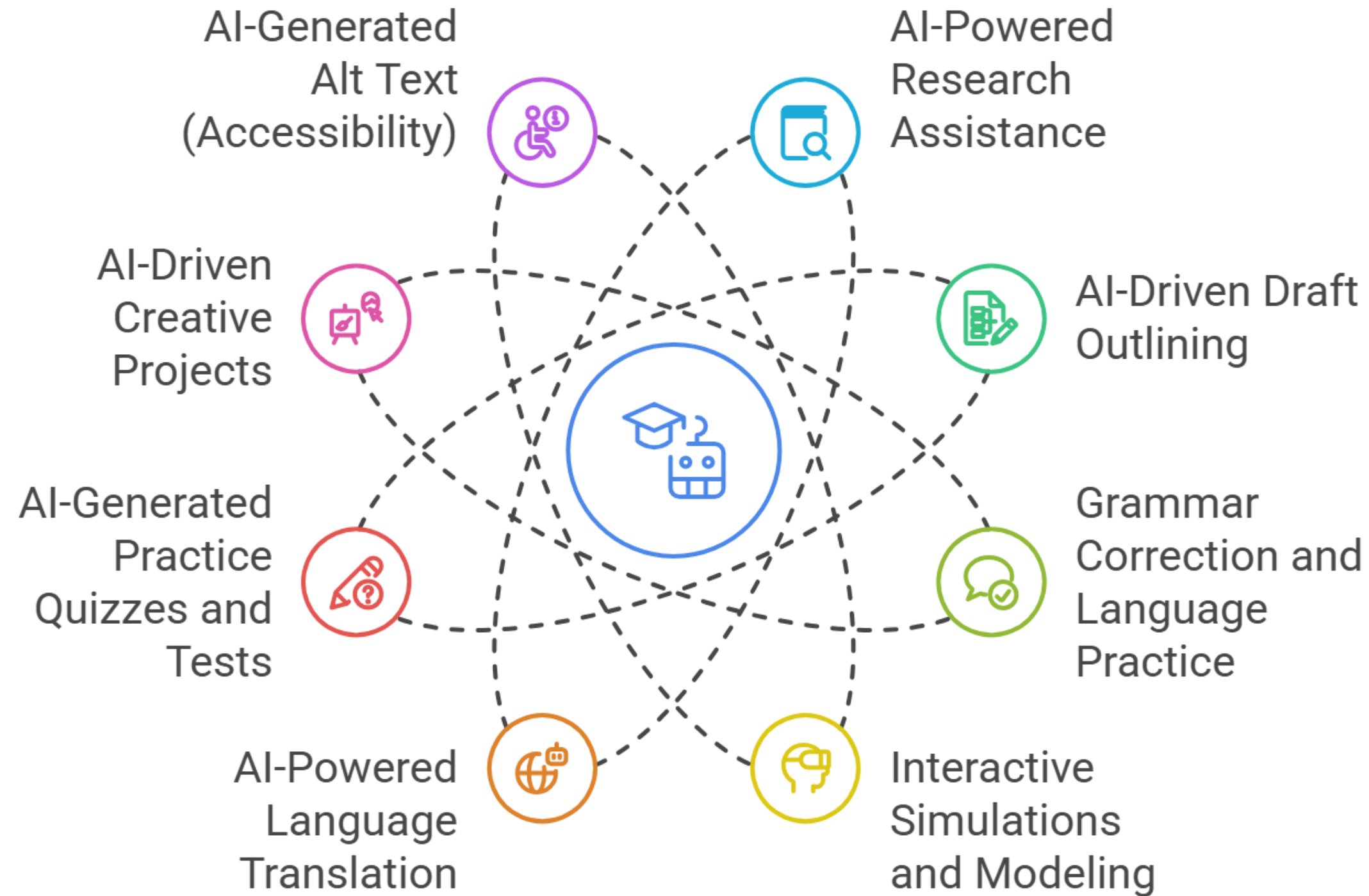
 **Collaborative Prompt Analysis:** Have students review and improve each other's AI prompts. This cultivates rhetorical awareness, precision, and ethical usage.

 **Critical Reflection Essays:** Ask students to write about how AI influenced their thinking—where it helped, where it misled, and how they verified or revised the output.

 **Process Portfolios:** Instead of a single product, students submit a folder of drafts, AI exchanges, and reflections to demonstrate learning evolution over time.



A.I in Education: Other Applications



These emerging tools are reshaping how we design instruction and support learners.

When used intentionally, they can offer scalable ways to personalize learning, foster engagement, and improve equity across disciplines.

A.I in Education: On the Spot Materials

Prompt

—

Create a short paragraph about going to the beach in California, but include 10 grammatical mistakes for students to correct.

yesterday I goes to the beach in california with my friends. we was excited to swim, but the water were very cold. We bringed snacks like chips, fruit, and a sandwiches. while we was eating, a seagull try to steal our food. my friend yell, "leave us alone!" and the bird flyed away. It was fun day, and we wants to go again next weekend.

Prompt

—

Now translate that to spanish, but retain the grammatical errors

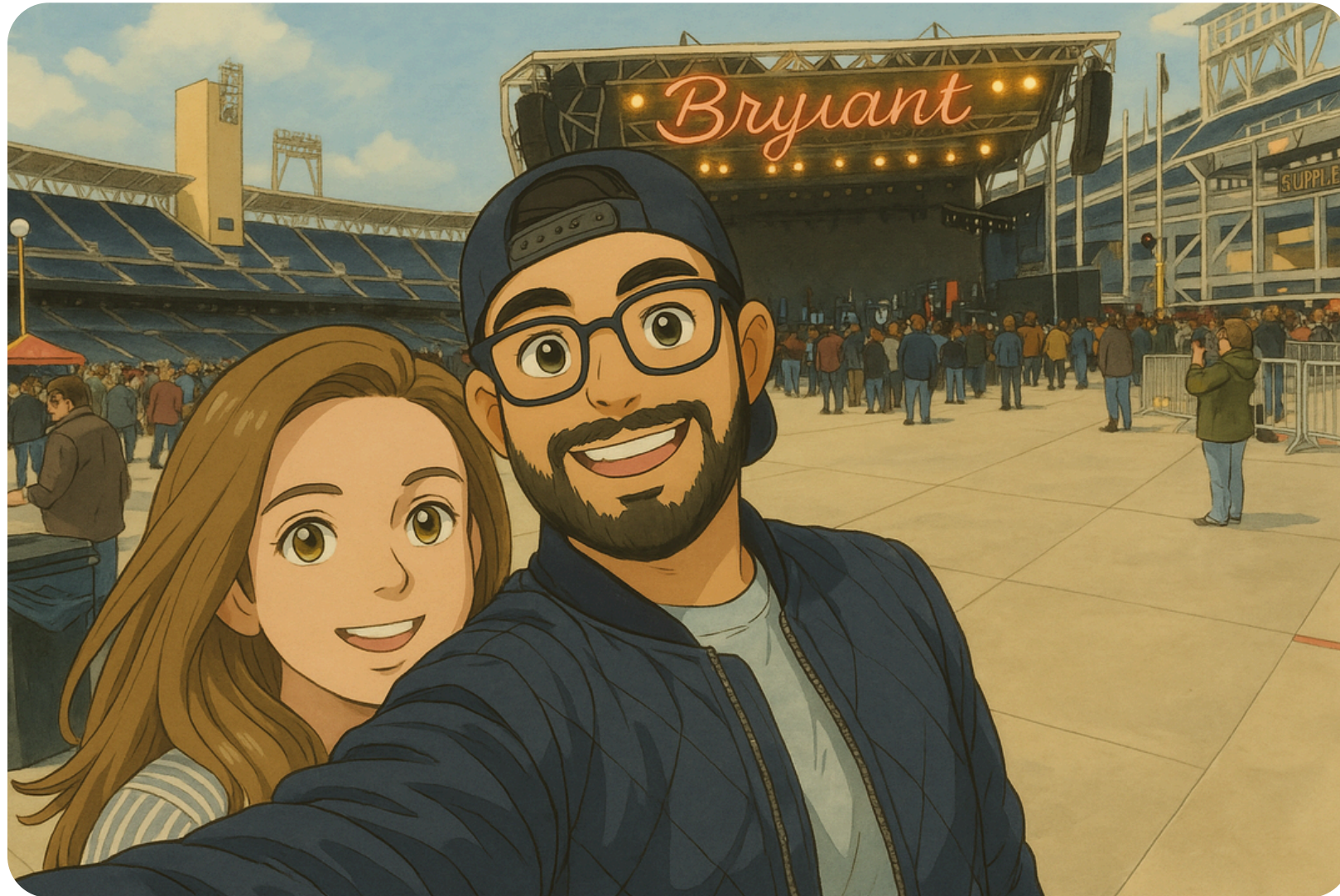
ayer yo va a la playa en california con mis amigos. nosotros estaba emocionados para nadar, pero el agua eran muy fría. Nosotros traió bocadillos como papas fritas, fruta, y un sándwiches. mientras nosotros estaba comiendo, una gaviota intenta robar nuestro comida. mi amigo grita, "¡dejarnos solos!" y el pájaro volóse. fue divertido día, y nosotros quiere ir otra vez el próximo fin de semana.

With AI, you can create custom grammar warm-ups, translation tasks, and editing exercises on the spot—tailored to any language level, topic, or student need.

A.I in Education: A.I for Accessibility

Prompt

Generate alt text for this image that is compliant with ADA



A hand-drawn, anime-style illustration of a smiling couple taking a selfie at an outdoor concert. The man, with a beard, glasses, and a backwards cap, wears a dark quilted jacket. The woman beside him has long light-brown hair, hazel eyes, and a striped shirt. Behind them is a stage with the name "Bryant" lit up in large cursive letters, as people gather in the open space of a large stadium. The atmosphere is cheerful and lively, with a clear sky and soft lighting that creates a warm, inviting tone.

A.I in Education: A.I for Accessibility



Literature as Equipment for Living

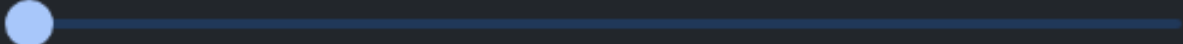
4 sources

The provided texts collectively explore the multifaceted nature and aims of education. **Elbow** argues for the importance of both intuitive and critical thinking in writing and learning, suggesting a dynamic interplay between generative exploration and careful revision. **Burke** presents literature and even proverbs as "equipment for living," offering strategies for navigating recurring social situations and understanding human experiences. **Erasmus** passionately advocates for early childhood education in virtue and learning, emphasizing the pliability of young minds and the lasting impact of foundational knowledge. Finally, **Whitehead** critiques inert ideas in education, stressing the need for knowledge utilization, interconnectedness of subjects, and the cultivation of both cultural understanding and specialized expertise, ultimately defining education as the art of using knowledge effectively.

NotebookLM - Literature as Equipment for Living

Audio Overview 

Literature as Equipment for Living    

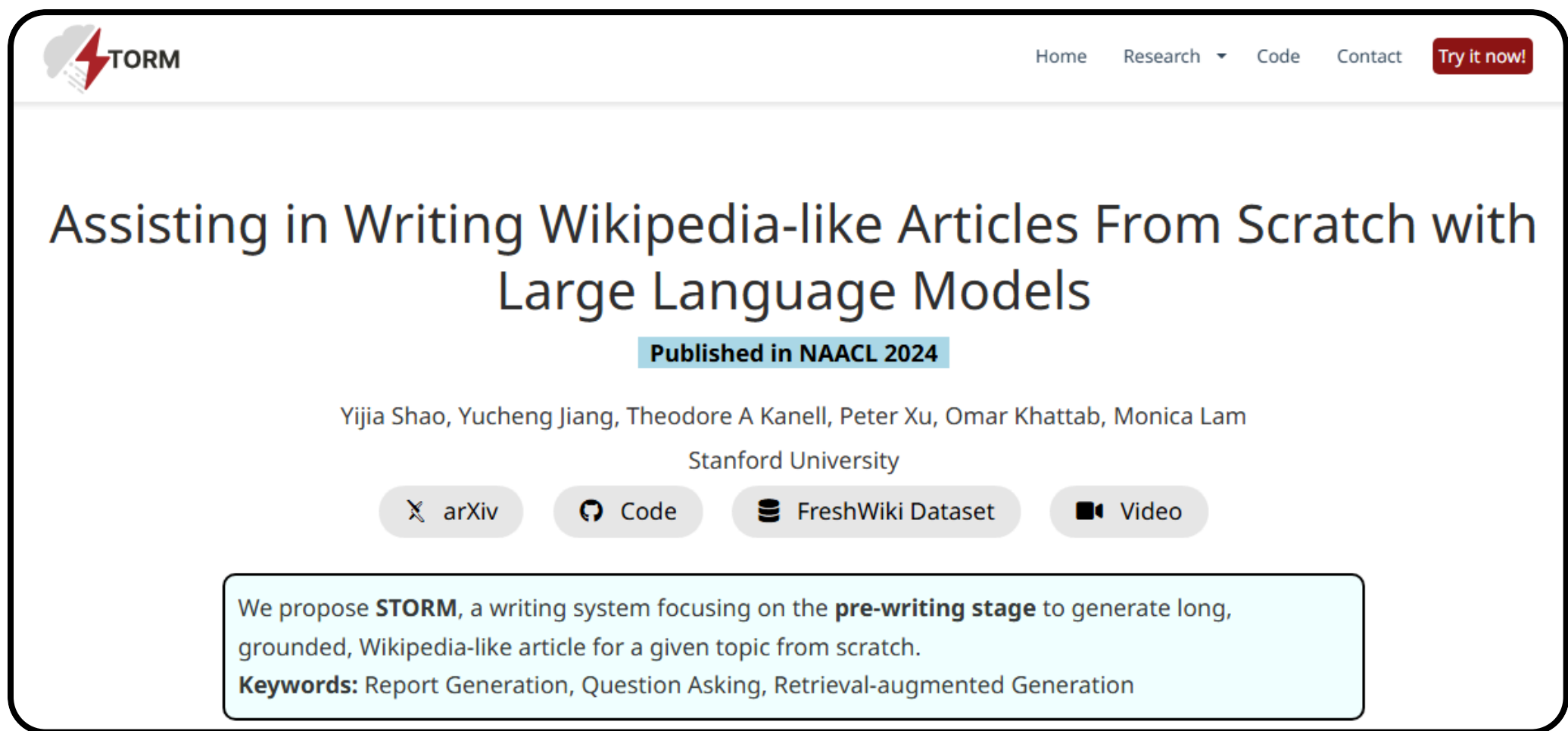
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Interactive mode BETA

AI tools like NotebookLM can generate audio podcast-style summaries based on readings, making complex texts more accessible.

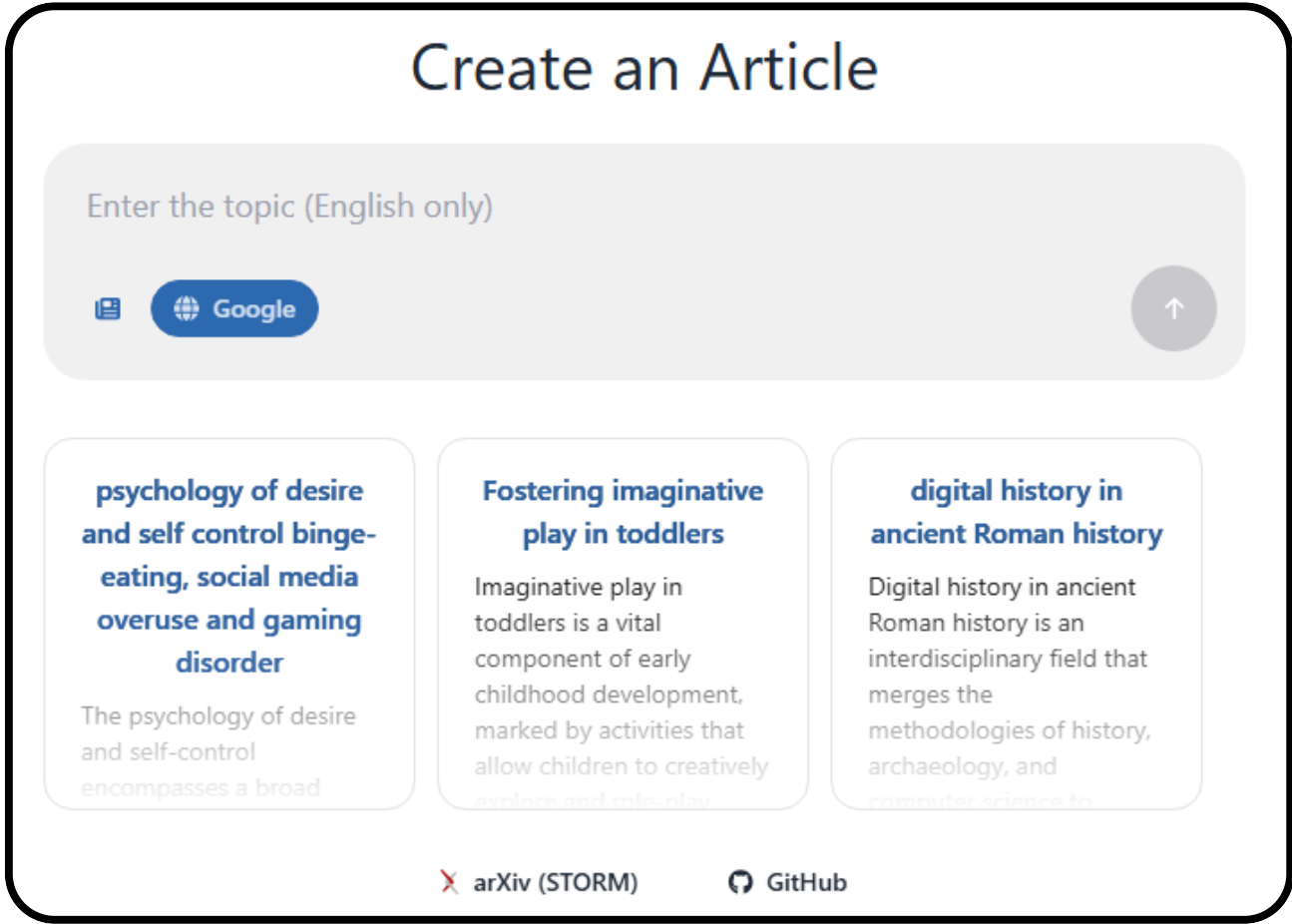
This AI-driven feature especially benefits individuals with dyslexia or reading difficulties by offering multimodal engagement—allowing users to listen, pause, and interact with content in more inclusive ways.

A.I in Education: A.I for Research



<https://storm.genie.stanford.edu>

STORM is a tool from Stanford that helps users create Wikipedia-style articles from scratch using AI. It supports the pre-writing process by generating questions, retrieving relevant sources, and organizing content. Ideal for students starting research or exploring new topics.



Institutional Innovation and Effectiveness

A.I in Education: A.I Bots for Education

Gomez Syllabot

A syllabus bot for English 101 & 205 with Professor Gomez. Students can engage with the content of the syllabus and get to know more about the course at their liesure.

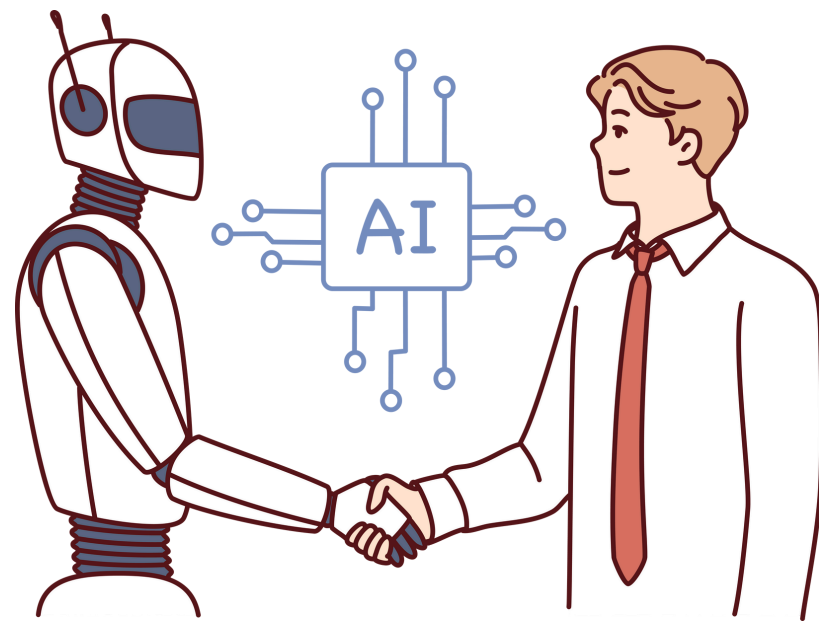
Start

The creators of this app can review your usage, never share personal information.
AI is not intended to give professional, legal, medical or financial advice.



AI bots can now be trained on course materials to deliver basic information, answer student questions, and support learning outside of class.

These **small**, custom-trained **models** help students engage with syllabi, assignments, and expectations on their own time.



A.I in Education: A.I Bots for Education

Essay Assistant

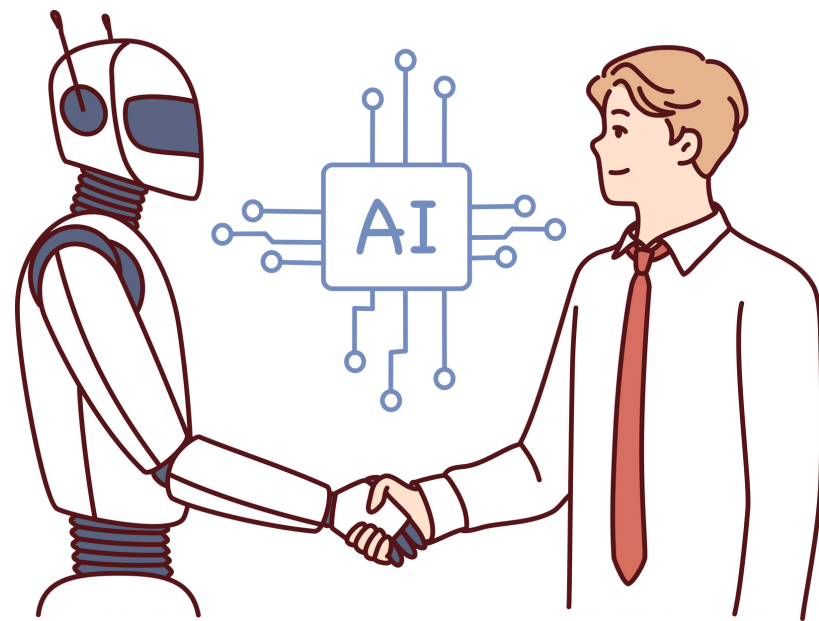
Description

Essay Architect helps students understand and respond to their writing assignments. It walks them through outlining their essays using either point-by-point or block structure, while also helping them choose relevant literary frameworks. It never drafts content but guides students in planning strong, well-organized essays.



Tools like Playlab and Nectir are already helping educators build conversational bots that offer scaffolding, feedback, and reminders—available to students anytime they need support.

These bots don't replace instruction—they **reinforce** it, giving students another way to stay engaged, organized, and confident.



Leveraging AI for Design

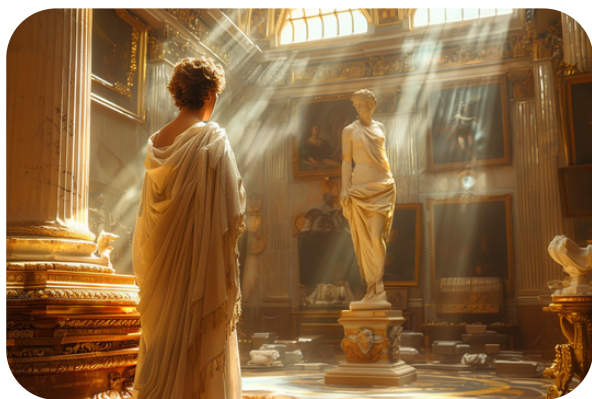
Custom LMS Visuals

Use AI to generate banners, icons, and section headers for your Canvas shells



Cover Art & Branding

Generate unique artwork for syllabus covers, assignment templates, or department flyers that give your materials a cohesive visual identity.



Topic Illustrations

Create quick, relevant images for complex ideas to enhance slide decks or worksheets.



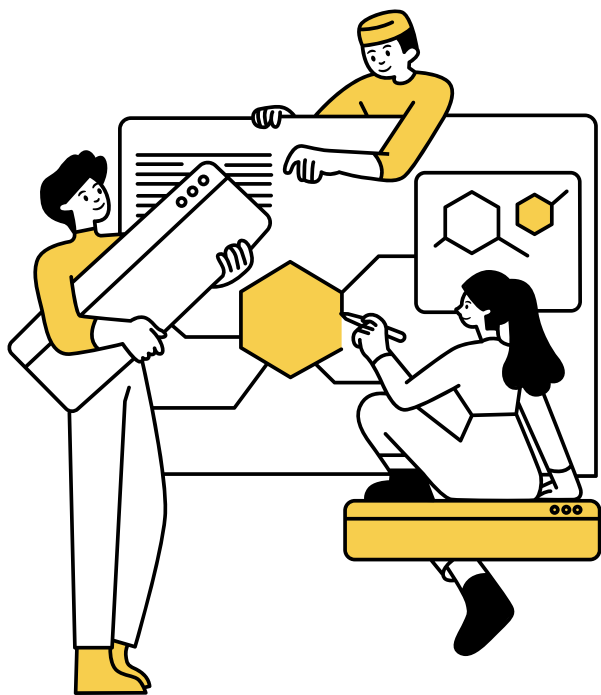
Leveraging AI for Design



Leveraging AI for Gamification & PBL

AI for Gamification & Project-Based Learning Gamification with AI

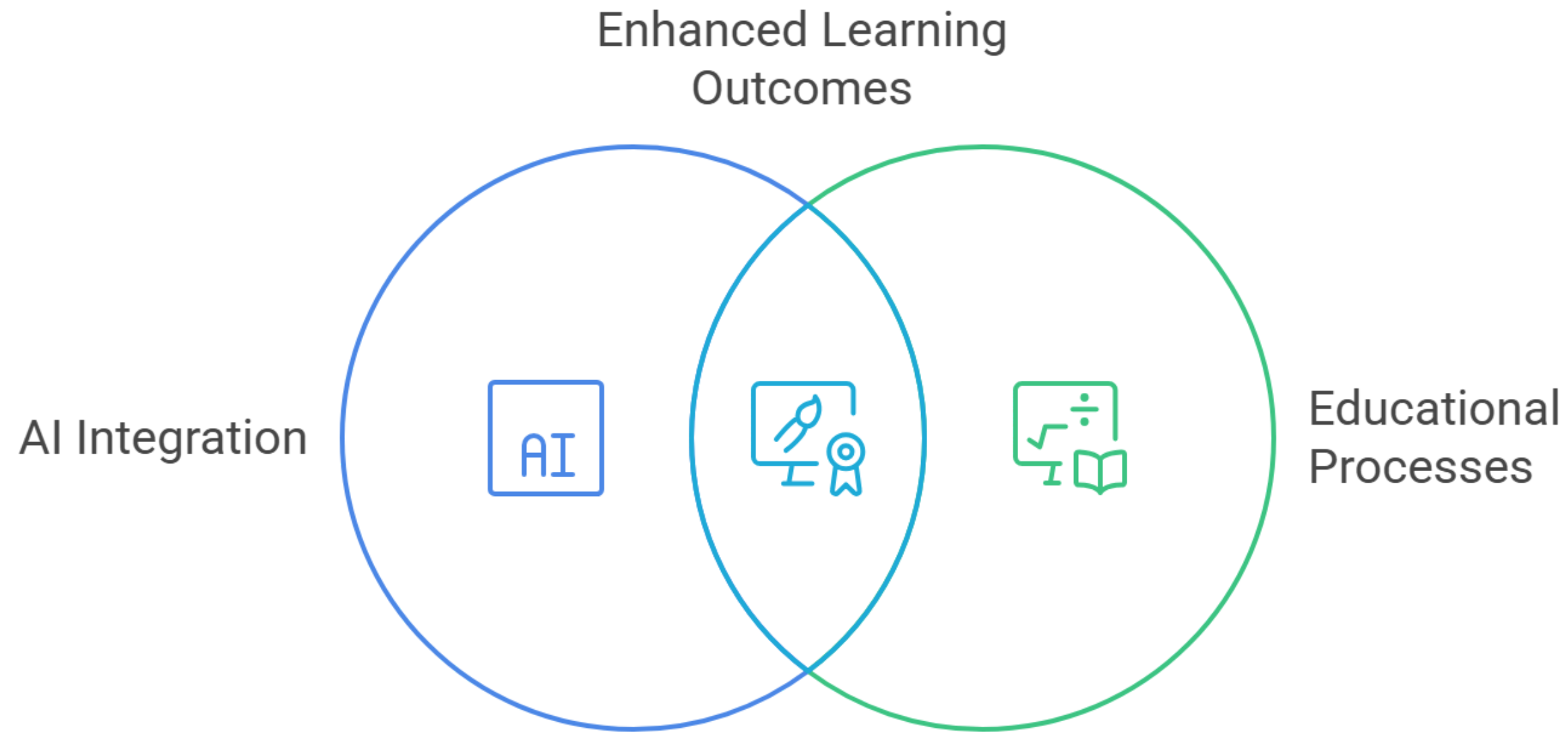
- Create dynamic challenges, quests, and achievement systems powered by AI tools.
- Use AI to auto-generate feedback, storyline branches, or adaptive tasks.
- Boost motivation by turning learning goals into game-like experiences.



AI in PBL (Project-Based Learning)

- Use AI to scaffold research, organize timelines, and generate prototypes.
- Empower students to use AI as a creative collaborator—not just a tool.
- Encourage reflection: how did AI shape the project? Where did human insight take over?

Remember: Regardless of Discipline



AI isn't replacing education—it's reshaping how we design, assess, and engage.

Across disciplines, AI can scaffold student thinking, enhance equity, and foster authentic learning.

Join II&E for Upcoming AI Activities Spring 2025

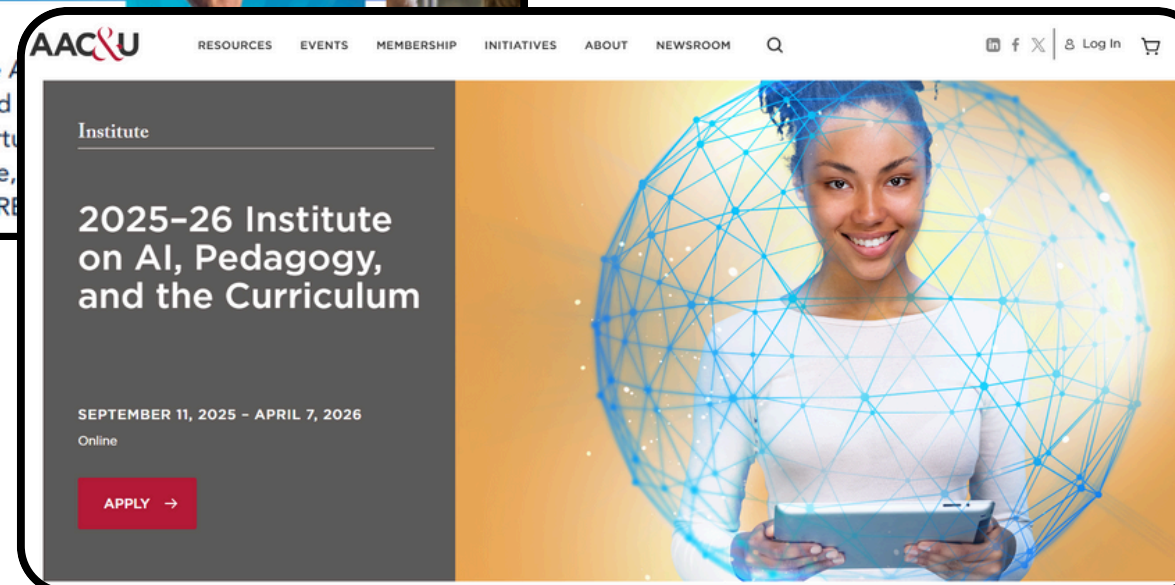
4/29/2025 - AI and Research: A Showcase of Tools You Need to Know

5/9/2025 - Maximizing Efficiency with AI: Strategies and Tools for Your Work Day

5/23/2025 - Enhancing Learning with AI Chatbots: Strategies for Integration and Engagement



THE SHOW @ ASU+GSV is an immersive exploration of the AI Revolution in EDU—and the most comprehensive AI-focused event that puts educators first. This is a one-of-a-kind opportunity to gather with peers, experience the AI campus of the future, even bring your students to sharpen their AI skills... all for FREE!



**SAN DIEGO**
Community College District
Institutional Innovation and Effectiveness

InnovAltion DAY
2025

**Featured Keynote Speaker**
Amanda Bickerstaff
Co-Founder and CEO of AI for Education
Keynote Session: Learn, Experience, Innovate:
The Opportunity for Education in an AI World

AGENDA
Morning Session

- Check-In and Welcome from Chancellor Smith & Vice Chancellor Fischthal
- Keynote Session by Amanda Bickerstaff
- Breakout Session
 - Hands-On: Build-a-Bot
 - The Human Factor: Exploring Ethical Dilemmas in Artificial Intelligence

Lunch
Afternoon Session

- AI Student Panel
- Breakout Session
 - Hands-On: Gen AI Art Challenge
 - Supercharge Your Content Creation with AI
- Industry Panel
- Art Challenge Gallery Walk and Opportunity Drawing

**Date: April 18th, 2025**
Time: 8:30am-5:00pm
Venue: SDCCE North City Campus
<https://bit.ly/InnovAltion2025>
QUESTIONS? Contact Institutional Innovation & Effectiveness at ii@sdccd.edu or 619-388-6580



SURVEY

**Thanks for coming. Hope
you found our time
productive!**

Stay in touch!
rgomez001@sdccd.edu





THANK YOU

SAN DIEGO
CITY COLLEGE

SAN DIEGO
MESA COLLEGE

SAN DIEGO
MIRAMAR
COLLEGE

SAN DIEGO COLLEGE OF
CONTINUING EDUCATION

Institutional Innovation and Effectiveness