The Transformative Power of Generative AI in Education

PACE Annual Conference
January 25, 2024

PACE
Policy Analysis for California Education

Table Introductions

- Name
- Organization
- Why you chose to come to this breakout session

Panelists

Prof. Chris Piech, Computer Science Education, Stanford University

Pam Vachatimanont, Director Operations and Partnerships, TeachAI

Jerry Almendarez, Superintendent, Santa Ana Unified School District

Chris Piech

Pam Vachatimanont

AI Guidance for Schools Toolkit

Teach AI

Here's how to reach me

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Teach AI

About TeachAI

TeachAI guides education leaders and policymakers in rethinking education in an increasingly AI-driven world by connecting the discussion of teaching *with* AI to teaching *about* AI including computer science.

In coordination with the World Economic Forum

Advisory Committee

AASA, The School Superintendents Association
AAAI
Allen Institute for AI
Accenture
ACT
AFT
Adobe
AI4ALL
AI4K12
aiEDU
AIforEducation
Amazon
American Federation of Teachers
American Indian Science and Engineering Society
Arab Bureau of Education for Gulf States
ASCD
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Atlassian
Black in AI
Canada Learning Code
Center for Security and Emerging Technology
Chiefs for Change
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College Board
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COSSBA
CoSN – Consortium for School Networking
Council of Chief State School Officers
Council of the Great City Schools
CSEdResearch.org
Cyber Innovation Center
Data Science 4 Everyone
Dell Technologies
Digital Promise
Education Commission of the States
Encode Justice
Everyday AI
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EY
German Informatics Society
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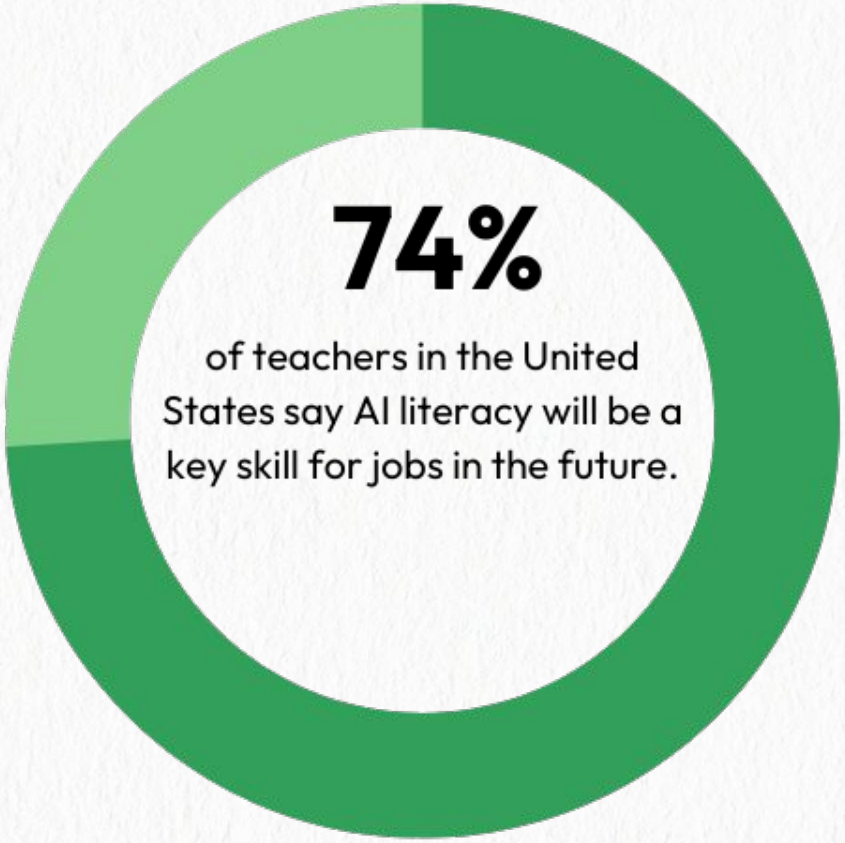
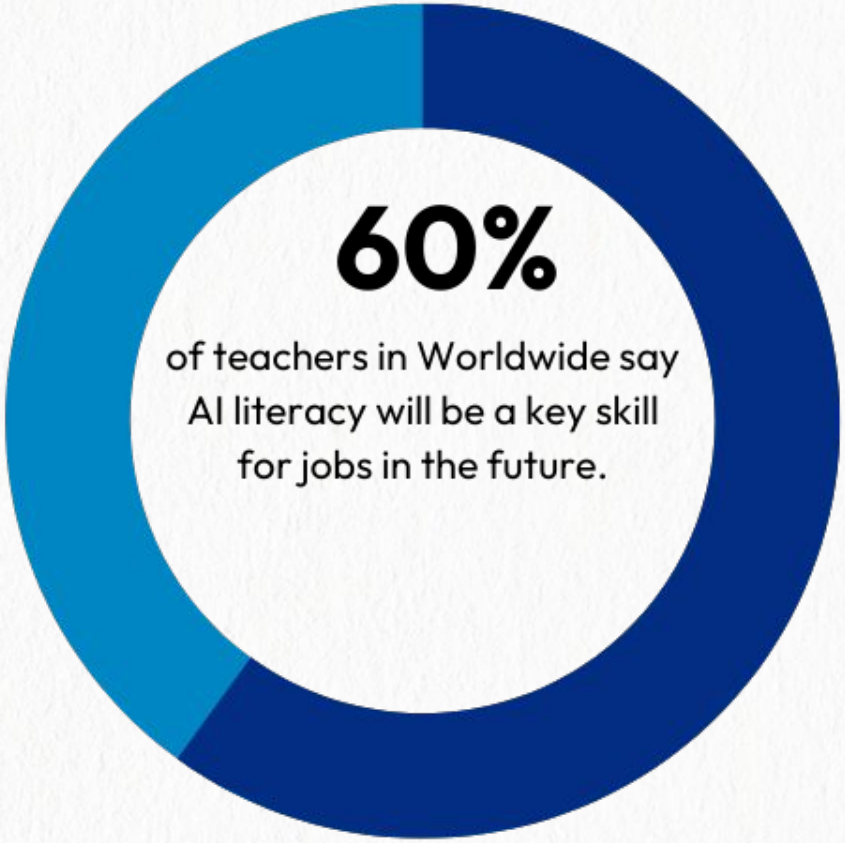
InnovateEDU
Inter-American Development Bank
Meta
Micro:bit Educational Foundation
Micron Technology
Microsoft
National Association of State Boards of Education
National Council of Teachers of Mathematics
NCWIT
National Education Association
National School Boards Association
One Generation – Indigitize
OpenAI
Pearson
Policy Analysis for California Education (PACE)
PowerSchool
SETDA
SIIA
Sociedad Científica Informática de España
Sociedade Brasileira de Computação
Southeast Asian Ministers of Education Organization (SEAMEO)
STEAMLabs Africa
Teach For America
Teach for All
UNICEF
Wharton Interactive
World Bank

Context

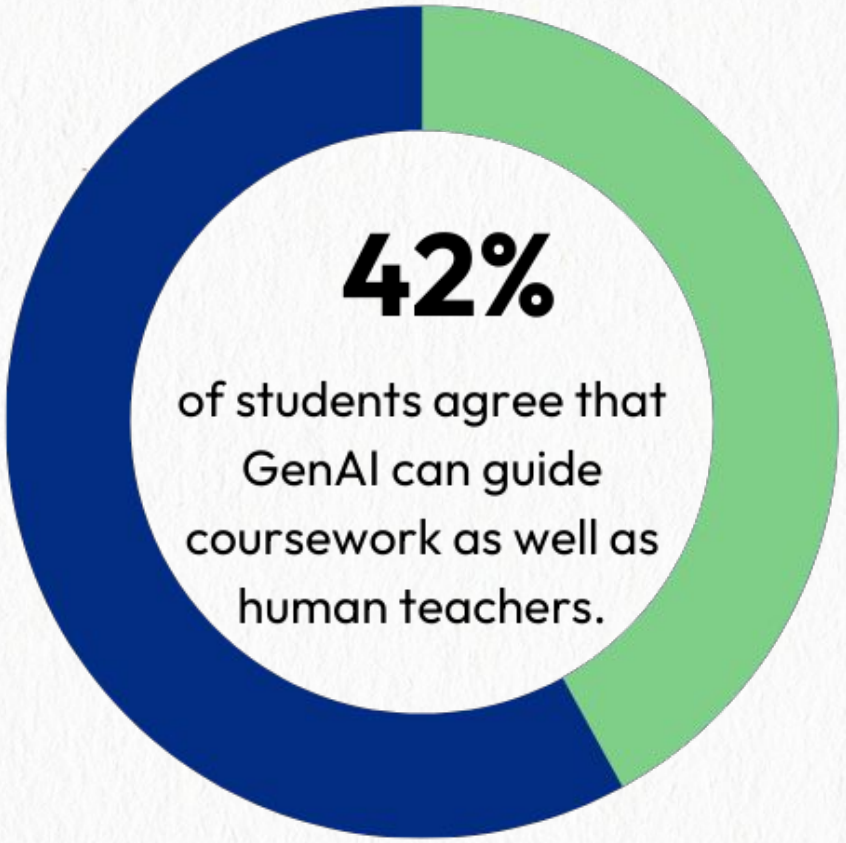
Teachers Believe AI Literacy is an Important Skill

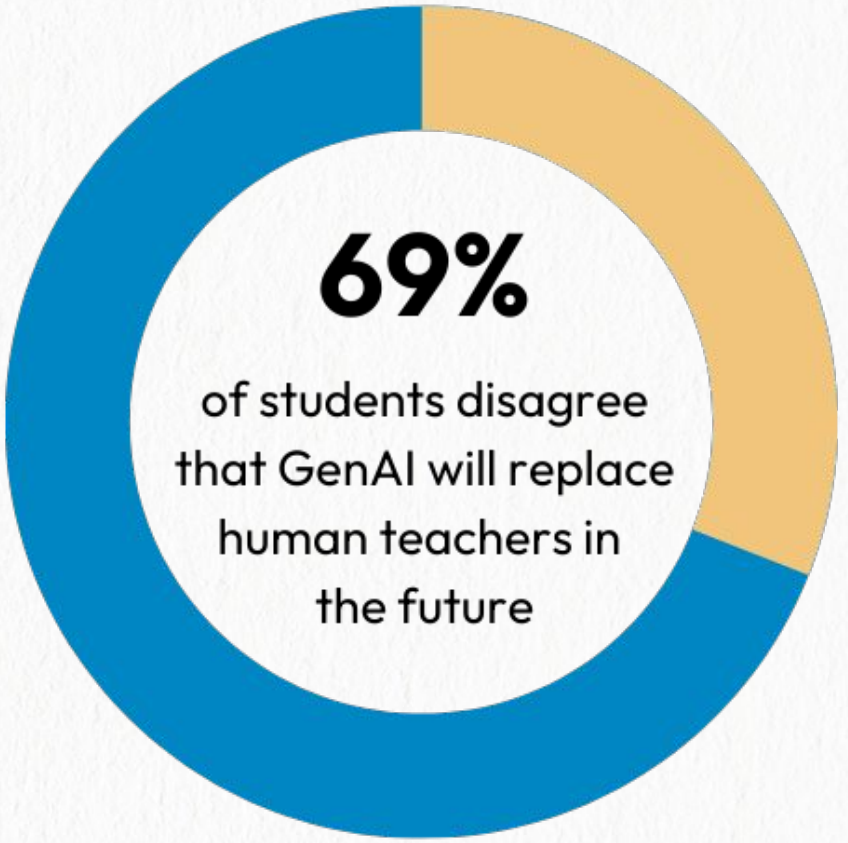




Source: Capgemini Research Institute

Student Views on GenAI vs. Human Teachers





Source: Quizlet State of AI in Education Report

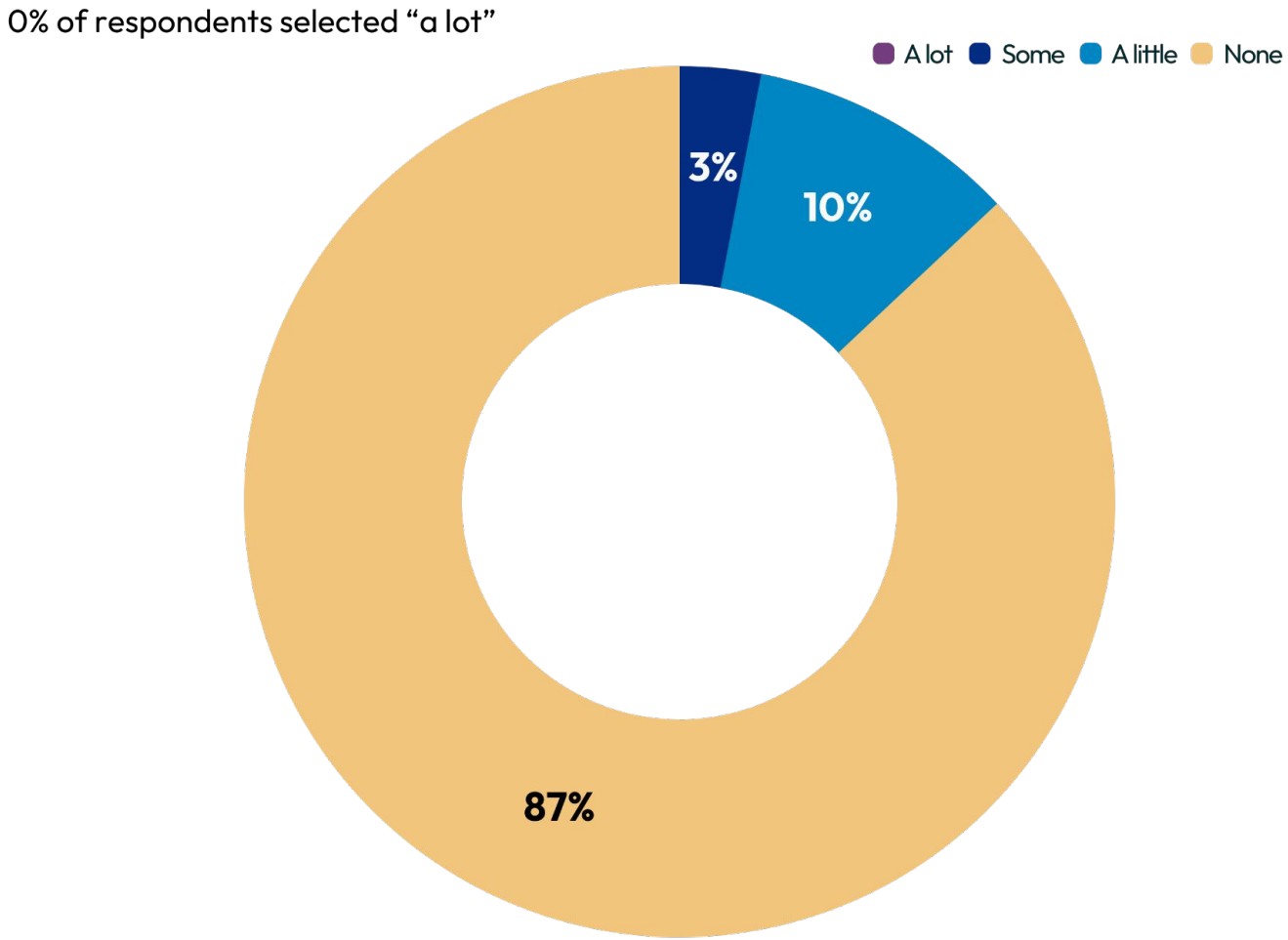
Educational Systems Worldwide Lack Guidance

Only 7% of education systems provide guidance about the use of generative AI.

Source: UNESCO

Educators Lack Professional Development on AI

How much professional development have you received about incorporating AI into your work in K-12 education?



87% have never received any PD about AI.

Source: Edweek Research Center

Teach AI

AI Guidance for Schools Toolkit

teachai.org/toolkit

C O
D E

CoSN
LEADING EDUCATION INNOVATION

Digital Promise

EUROPEAN EDTECH ALLIANCE

PACE

Toolkit Overview

Key Messages

1. Meet the Urgent Need for Guidance
2. Don't Ban AI, #TeachAI
3. Optimize Opportunities, Address Risks
4. AI Literacy = How to use AI + How AI works

Menu

AI Guidance For Schools Toolkit

Access Editable Document

AI is transforming our world.

Let's #TeachAI

How To Use This Toolkit

- Incorporate AI in an Education System
- Apply Seven Principles for AI in Education
- View Sample School Guidance
- Revise Existing Policies
- Customize a Presentation
- Engage Parents, Staff, and Students
- Learn How AI was Used in This Toolkit

Welcome

"It is in a spirit of humility that we offer this toolkit. My sincere hope is that teachers feel guided and supported by their leaders as we all adapt to the changes AI brings to education."

Pat Yongpradit, Chief Academic Officer of Code.org and Lead of TeachAI

This toolkit is designed to help education authorities, school leaders, and teachers create thoughtful guidance to help their communities realize the potential benefits of incorporating artificial intelligence (AI) in primary and secondary education while understanding and mitigating the potential risks.

While terminology varies across countries and regions, "**education system**" refers to a district, regional, state, or national governing body, agency, or

Framework for Incorporating AI

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Stage 1

Create policy to address the immediate risks so that AI does not undermine learning during the coming year.

Stage 2

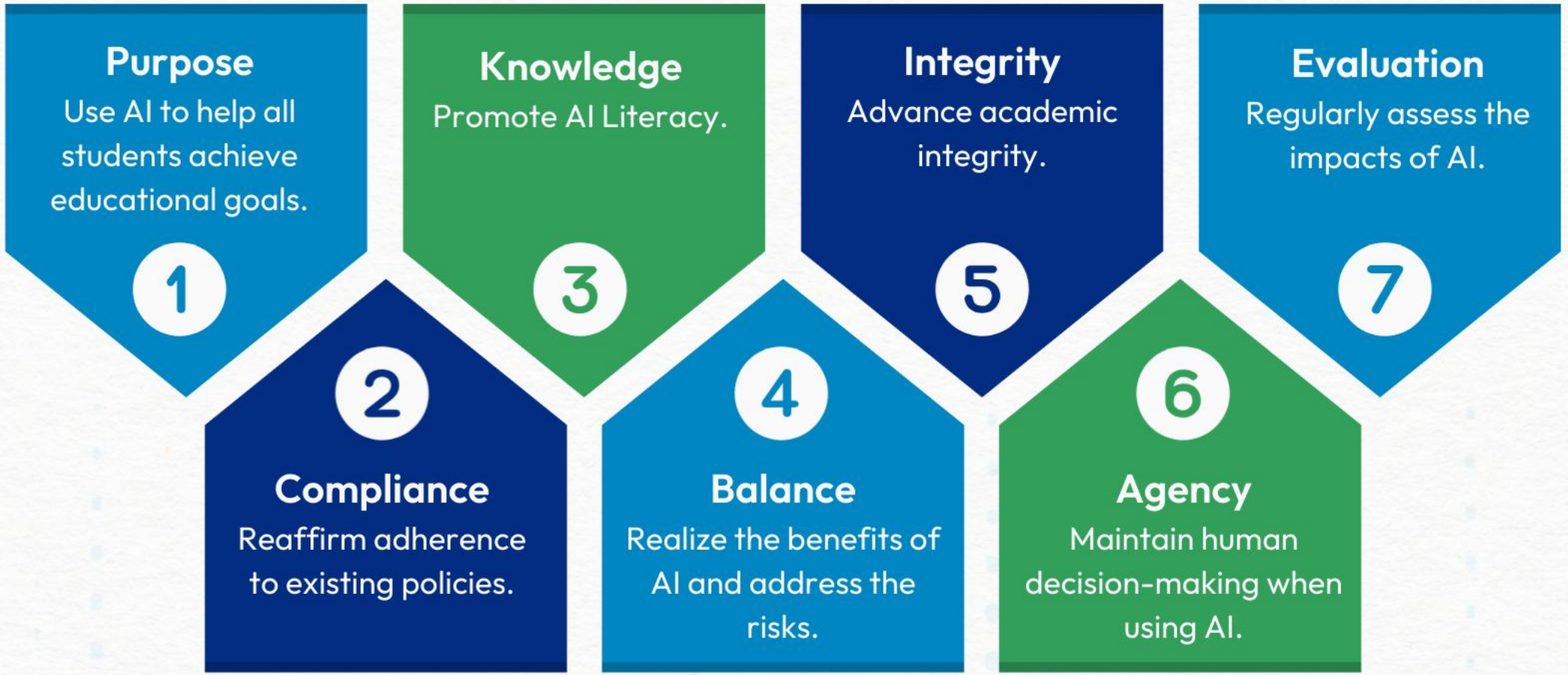
Facilitate organizational learning by making a small but strategic investment in harnessing the individual learning of the many educators already excited about AI.

Stage 3

Identify areas for improvements and effective transformations with potential to scale to support the education system.

Teach AI

Seven Principles for AI in Education



Potential Benefits & Risks of Using AI in Education

Potential Benefits

Content development and **differentiation**

Assessment design and timely, effective feedback

Tutoring and **personalized** learning assistance

Aiding **creativity** and **collaboration**

Operational and administrative **efficiency**

Potential Risks

Plagiarism and academic dishonesty

Diminished agency and **accountability**

Privacy issues and unauthorized data collection

Overreliance and loss of critical thinking

Perpetuating **societal bias**

1. Purpose: Use AI to help all students achieve educational goals.

Education leaders should clarify the shared values that will guide the use of AI tools, especially those that were not specifically created for educational contexts. AI tools should be applied to serve existing goals, such as promoting student and staff well-being, enriching student learning experiences, and enhancing administrative functions.

Discussion Questions

✅ How does our guidance highlight the purposeful use of AI to achieve our shared education vision and goals?

✅ How do we reduce the digital divide between students with easy access to AI tools at home and those dependent on school resources?

✅ How does our guidance ensure inclusivity, catering to diverse learning needs and linguistic and cultural backgrounds?

Addressing Equity

Using AI tools to promote equity in education requires both access and thoughtful implementation. Equity is also addressed in the other principles in this toolkit, such as promoting AI literacy for all students or realizing the benefits of AI and addressing the risks.

Education systems should provide access to AI tools to all students by removing general bans on AI, except those due to age restrictions or specific data and security concerns. Attempting to enforce broad bans on AI is a futile effort that widens the digital divide between students with independent access to AI on personal devices and students dependent on school or community resources. Notably, closing the digital divide in an age of AI still begins with internet connectivity, device availability, and basic digital literacy.

Age Restrictions and Parental Consent

ChatGPT currently requires that users be at least 13 years old and requires parent or legal guardian's permission for students between the ages of 13 and 18. The website warns that "ChatGPT may produce output that is not appropriate for all audiences or all ages and educators should be mindful of that while using it with students or in classroom contexts.

Attempting to enforce general bans on AI is a futile effort that serves to widen the digital divide...

2. Compliance: Reaffirm adherence to existing policies.

When implementing AI systems, the key areas of technology policy to comply with are privacy, data security, student safety, data transfer and ownership, and child and youth protection.

The Council of Great City Schools and the Consortium for School Networking (CoSN), in partnership with Amazon Web Services, have developed the K-12 Generative Artificial Intelligence (Gen AI) Readiness Checklist to help districts in the U.S. prepare for implementing AI technology solutions. The checklist provides a curated list of questions to help district leaders devise implementation strategies across six core focus areas: Executive Leadership, Operations, Data, Technology, Security, and Risk Management.

Discussion Questions

✅ What is the plan to conduct an inventory of systems and software to understand the current state of AI use and ensure adherence to existing regulations, security, and privacy?

✅ Does the education system enforce contracts with software providers, stipulating that any use of AI within their software or third-party providers must be clearly revealed to district staff and first approved by district leadership?

The Common Sense Media AI Ratings System provides a framework "designed to assess the safety, transparency, ethical use, and impact of AI products."

Example: Wayne RESA, Michigan, USA, created an AI guidance website and document with ethical, pedagogical, administrative, and policy considerations. *"AI systems often need large amounts of data to function effectively. In an educational context, some uses could involve collecting and analyzing sensitive data about students, such as their learning habits, academic performance, and personal information. Therefore, maintaining student privacy is the primary ethical consideration. Even with consent, it is not appropriate to prompt public models with identifiable data because anything shared with a model, even if information is shared in prompt form, may be added to the model for future reference and even shared with other users of the model."*

Current regulations relevant to the use of AI in education

United States

- FERPA - AI systems must protect the privacy of student education records and comply with parental consent requirements. Data must remain within the direct control of the educational institution.
- COPPA - AI chatbots, personalized learning platforms, and other technologies collecting personal information and user data on children under 13 must require parental consent.
- IDEA - AI must not be implemented in a way that denies disabled students equal access to education opportunities.
- CIPA - Schools must ensure AI content filters align with CIPA protections against harmful content.
- Section 504 - This section of the Rehabilitation Act applies to both physical and digital environments. Schools must ensure that their digital content and technologies are accessible to students with disabilities.

International

Guidance on the Use of AI in Our Schools

Purpose

This document guides our students, staff, and school communities on the appropriate and responsible use of artificial intelligence (AI), particularly generative AI tools, in classroom instruction, school management, and systemwide operations. Generative AI has potential benefits for education and risks that must be thoughtfully managed.

Artificial intelligence refers to computer systems that are taught to automate tasks normally requiring human intelligence. "Generative AI" refers to tools, such as Bard, Bing Chat, ChatGPT, Mid-Journey, and Dall-E, that can produce new content, such as text, images, or music, based on patterns they've learned from their training data.[12] This is made possible through "machine learning," a subset of AI where computers learn from data without being explicitly programmed for a specific task. Think of it as teaching a computer to be creative based on examples it has seen! While generative AI tools show great promise and often make useful suggestions, they are designed to predict what is right, which isn't always right. As a result, their output can be inaccurate, misleading, or incomplete.

> ✍️You may want to specifically reference your existing technology use, academic integrity, and student support policies here.

Scope

This guidance applies to all students, teachers, staff, administrators, and third parties who develop, implement, or interact with AI technologies used in our education system. It covers all AI systems used for education, administration, and operations, including, but not limited to, generative AI models, intelligent tutoring systems, conversational agents, automation software, and analytics tools. This guidance complements existing policies on technology use, data protection, academic integrity, and student support.

Guiding Principles for AI Use

The following principles guide the appropriate and safe use of AI and address current and future educational goals, teacher and student agency, academic integrity, and security. We commit to adopting internal procedures to operationalize each principle.

1. **We use AI to help all of our students achieve their educational goals.** We will use AI to help us reach our community's goals, including improving student learning, teacher effectiveness, and school operations. We aim to make AI resources universally accessible, focusing especially on bridging the digital divide among students and staff. We are committed to evaluating AI tools for biases and ethical concerns, ensuring they effectively serve our diverse educational community.

We are looking into updating the Toolkit.
We welcome any and all feedback!

Join Nov 8 Webinar

Leave Feedback

AI in Education Presentation

Customize this presentation on AI in education for your own purposes.

Contents

Use the Slides

Thank you!

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Jerry Almendarez

PACE
Policy Analysis for California Education

AI in the Classroom

OVERVIEW, TOOLS, AND STRATEGIES

AGENDA

Introduction to AI in Education
Benefits of AI in the Classroom
Real-World Examples
Potential Challenges
Ensuring Ethical and Responsible Use
Future Possibilities
Q&A

What is AI?

AI IN THE CLASSROOM

Artificial intelligence is the science of making machines that can think like humans. It can do things that are considered "smart." AI technology can process large amounts of data in ways, unlike humans.

The goal for AI is to be able to do things such as recognize patterns, make decisions, and judge like humans.

BENEFITS

One of the key benefits of incorporating AI into the classroom is the ability to provide students with a more personalized learning experience.

AI algorithms can analyze student data and adapt to their learning styles, providing feedback and recommendations that are tailored to their individual needs and abilities.

This can help to keep students engaged and motivated and can lead to improved academic performance.

STUDENT PERSPECTIVE

Plaigerism didn’t start with AI, the same skills we taught to prevent plaigerism prior - citation, revising, one-on-one coaching, etc still apply

EMBRACE IT

Ai isn’t going to go away, so lets use it as a tool to make our jobs easier and more effecient.

AI and Santa Ana USD

AI in the Classroom

PERSONALIZED LEARNING

Leveled language
Personalized accommodations
Scaffolding
Student Choice and Voice

EFFICIENT GRADING AND FEEDBACK

Create custom rubrics
Generate feedback

ENHANCED PRODUCTIVITY

Lowered mental load

PERSONALIZED LEARNING

Leveled language
Personalized Accommodations
Scaffolding
Student Voice and Choice

CREATE CUSTOM RUBRICS
GENERATE FEEDBACK

EFFECIENT GRADING

https://app.magicschool.ai/tools

ENHANCED PRODUCTIVITY

BEST AI TOOLS

MAGIC SCHOOL

CHAT GPT

SLIDESGO.COM/AI-PRESENTATIONS

PRESSTO

AI PROMPTS FOR TEACHERS

Slides from SAUSD Future Ready

Table Talk

- What questions or observations came up for you?
- What are ideas or action items you can take back to your organization?
- What statewide policies, structures, or supports are needed at this time?

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