



Tech Talk

Developing AI Literacy in Education: Foundations, Responsibilities, and Practical Resources for K-12 Classrooms

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Abstract

Artificial intelligence has rapidly moved from a specialized field of study to a mainstream tool used daily by educators and students. While generative AI offers powerful opportunities for creativity, efficiency, and innovation, it also introduces significant ethical, legal, and cognitive challenges. This article defines AI literacy, explains its growing importance in K–12 education, and outlines key principles for responsible AI use. Emphasis is placed on helping students understand how AI works, evaluate AI-generated content critically, and use AI as a tool rather than a substitute for human thinking. The article concludes with a curated chart of free and accessible resources to support educators, students, and families in developing AI literacy across grade levels.

Introduction

Artificial intelligence may seem relatively recent; however, it has been evolving for many years. With the advent of Generative AI, it has become widely popular across many sectors, including education (Caukin et al., 2023; Doss et al., 2025). Educators are ever learning to leverage AI tools to streamline routine tasks, design meaningful and innovative lessons, create visual and graphical instructional materials, and engage students in AI-supported creative activities (Caukin et al., 2023; Coley et al., 2023; Vilcarino & Langreo, 2025). Similarly, students are using Generative AI for brainstorming ideas, researching sources, supporting writing and citation processes, summarizing content, creating music and images, among other applications (Deflitch, 2026; O’Connell, 2025).

While AI offers significant opportunities to improve productivity, creativity, and

innovation, it also presents considerable risks, including the spread of misinformation and deepfakes, the proliferation of bias, legal and ethical concerns, privacy and security threats, and potential environmental and psychological impacts (Mohammadi et al., 2026; Singlestone, 2024; University of South Florida, 2026). AI literacy can equip individuals with the knowledge and skills needed to minimize AI-related risks.

What is AI Literacy?

Digital Promise (2024) defines AI literacy as “the knowledge and skills that enable humans to critically understand, evaluate, and use AI systems and tools to safely and ethically participate in an increasingly digital world” (para. 1). Similarly, TeachAI (2025b) describes AI literacy as the “technical knowledge, durable skills, and future-ready attitudes required to thrive in a world influenced by AI. It enables learners to engage, create with, manage, and design AI while critically evaluating its benefits, risks, and ethical implications” (para. 1). Together, these definitions emphasize the essential role of knowledge, practical skills, and ethical responsibility in the effective and appropriate use of AI.

Why is AI Literacy Important?

Given the widespread and increasing use of AI among both teachers and students, educators must intentionally prepare themselves and their learners to engage with AI in responsible, ethical, and informed ways. This preparation requires a deliberate commitment to developing AI literacy so that individuals can critically and effectively use AI tools not only in educational settings but also in their personal and professional lives, including evaluating information credibility, protecting privacy, making informed decisions, and navigating an increasingly AI-driven society (Gibson, 2025; Kratochvil, 2025; OECD, 2025; Poth, 2024; World Economic Forum, 2025).

A foundational understanding of how AI systems function can enable students better recognize both their capabilities and limitations. Equally important is the ability to critically assess AI-generated content, as it may contain inaccuracies or reflect embedded biases yet still appear credible and convincing. Engaging students in evaluating and critiquing AI output not only promotes responsible use but also strengthens critical-thinking skills. Although AI can be a powerful tool for brainstorming and content creation, it must be used thoughtfully, ethically, and safely (Kratochvil, 2025; The Coding Space, 2025).

Stacy Kratochvil (2025) of the Krause Center of Innovation provides practical guidance for educators and students navigating AI. She highlights three key principles. First, students must understand how AI works and use it as “an assistant, not an authority.” Second, they must develop the ability to critically evaluate AI-generated output by identifying inconsistencies—such as extra fingers in images, unrealistic visuals or videos, or questionable information—even as AI continues to improve in producing increasingly convincing content. Third, students should use AI as a tool, not a crutch. While AI is highly effective at generating ideas, simplifying complex concepts, and

increasingly producing sophisticated visuals, videos, and music, it should not replace essential human qualities such as creativity, empathy, and critical judgment (Kratochvil, 2025).

Resources for Teaching AI Literacy

There are numerous resources available to help both adults and students navigate AI in ways that are critical, appropriate, and safe. TeachAI (2025ba) offers grade-level scenarios for teaching AI literacy from primary through secondary school. For example, in grades 3–5, students compare human-created art with AI-generated art, examining issues of authenticity and intellectual property. In middle school (grades 6–8), students use AI as a writing assistant while drafting a personal narrative, evaluating whether the AI output aligns with the original story, maintains the proper voice, and reflects ethical principles and human values. At the high school level (grades 9–12), students use collected and curated data to train AI systems to distinguish between objects and then analyze how the dataset influences the system’s output.

Sesame Workshop (2026) has developed “Digital Well-Being” resources for young children (ages three to five) and their caregivers in both English and Spanish. These materials include engaging videos, games, and activities designed for children to explore alongside adults. Examples include “AI and Us,” which demonstrates how AI can be used to find a recipe, and “Mindful Choices: Using Digital Media With Awareness and Attention,” which guides adults in making thoughtful decisions about media use. The resources also provide practical strategies to help children transition away from screen time.

Common Sense Media (2026a) has created a wide range of resources to support healthy digital engagement across grade levels. The organization released a free AI literacy curriculum for grades K–8, including lesson plans, slide decks, activity sheets, and videos. Sample lessons include “How Media Makes Me Feel” (kindergarten), “Words Can Help or Hurt” on cyberbullying (first grade), “S.I.F.T. for Sources” on evaluating online information (fourth grade), “Is It Fair Use? AI Edition” on copyright and creator rights (sixth grade), and “Chatbots & Friendship” (eighth grade), which explores the difference between chatbots and human relationships.

In addition, Common Sense Media (2026b) provides materials for students in grades 6–12 that explain what AI is, how it learns, how chatbots function, potential sources of bias, and concerns related to plagiarism. Lessons range from 15 to 50 minutes and include standards-aligned plans, with many offering accompanying videos or slide decks.

As students develop AI literacy, educators must grow alongside them (Hoffman et al., 2026). Common Sense Media (2026c) not only offers free student lessons but also provides free, self-paced professional learning courses for teachers. Course titles include “AI Basics for Teachers,” “Digital Literacy and Well-Being,” “ChatGPT Foundations for K–12 Educators,” and “Advanced ChatGPT for Educators: Unlocking

Educator Agency.”

Another nonprofit organization, Children and Screens: Institute of Digital Media and Child Development (2026), offers resources to help adults understand issues related to digital spaces and AI. Their materials address topics such as civic engagement, character development, and emerging technologies. Resources include announcements, podcasts, reports, webinars, and tip sheets. Notable examples include “Q: Should Parental Permission Be Required for Minors to Use AI Companions?” and “The Cost of Youth Attachment to AI Companions.”

Michigan Virtual AI Lab (2026) offers free AI literacy resources for both students and teachers, including lesson plans, videos, slide decks, and activity sheets. Topics cover foundational areas such as Introduction to AI, image generators, AI and data privacy, and AI’s role in the future. For schools or educators seeking deeper engagement, fee-based options provide more comprehensive content, hands-on practice, interactive simulations, and guided reflection activities.

AILiteracyDay.org is a nonprofit organization that provides free resources for educators, students, and families. Its resource page is updated monthly with curated content from organizations such as ISTE+ASCD, Quill.org, The Tech Interactive, iCivics, and others. Featured examples include “Hallucination Detective,” a middle and high school lesson from AI for Education, and “AI Scope and Sequence: PreK–12 Concepts for Teaching About AI” from the School Systems Libraries of New York. Additional resources include a lesson on algorithmic bias from Code.org.

Google hosts a blog called The Keyword, which features a page titled “The Latest Google AI Literacy Resources All in One Place” (Magiera, n.d.). This page includes a video designed for adults, an “AI Quest” activity for middle school students, and links to additional tools and materials for both students and educators.

Finally, TeachAI (2026), through National AI Literacy Day, provides resources focused on implementing AI literacy. These include key AI literacy frameworks, ethics flashcards for students, slide decks outlining AI learning scenarios, and practical toolkits to support teachers in classroom integration.

AI is not a passing trend; it is an embedded feature of modern life. The question is no longer whether students will use AI, but whether they will use it wisely. Educators have a responsibility to ensure that learners understand how AI systems function, recognize their limitations, question their outputs, and apply them ethically. When students are taught to treat AI as an assistant rather than an authority, to evaluate outputs critically, and to preserve their own creativity and judgment, AI becomes a powerful support rather than a shortcut. The resources provided in the chart below offer practical entry points for schools and families seeking to build sustainable, developmentally appropriate AI literacy from early childhood through secondary education.

Table of AI Literacy Resources

Site	Name	URL	Description
Sesame Workshop	Digital Well-Being	https://sesameworkshop.org/topics/digital-well-being/	Free resources for children ages 3-5 and their adult caregivers supporting their digital well-being
Common Sense Media (a)	Digital Literacy and Well-Being Curriculum K-8	https://www.commonsense.org/education/digital-literacy	Free lesson materials that support understanding AI literacy, cyberbullying, screentime, and more
Common Sense Media (b)	AI Literacy for Grades 6-12	https://www.commonsense.org/education/collections/ai-literacy-lessons-for-grades-6-12	Free lesson plans on a variety of topics, including AI and digital well-being
Common Sense Media (c)	Self-Paced Courses	https://www.commonsense.org/education/self-paced-courses	Free self-paced courses for educators to improve their understanding of AI and promote digital well-being
Children and Screens	Exploring Today's Questions	https://www.childrenandscreens.org/	Free resources for adults seeking information on helping children operate in digital spaces safely among many other topics
Michigan Virtual	AI Literacy Resources: Bringing AI Literacy to Your Classroom	https://michiganvirtual.org/ai/literacy/	A non-profit organization that offers courses for a fee and free resources for students and teachers. Information on different tools available in video format.
National AI Literacy Day	Welcome to National Literacy Day	https://ailiteracyday.org/	Year-round resource for K-12 lesson plans, workforce resources, and community toolkits.
Google: The Keyword	The Latest Google AI Literacy Resources All In One Place	https://blog.google/innovation-and-ai/products/goole-ai-literacy-tools-2025/	Blog site that focuses on Google Gemini (AI Literacy Hub), and has links to sites like aiEDU, Connect Safely, etc.
TeachAI	Teach AI Literacy Implementation Resources	https://www.teachai.org/ai-literacy	Free images, editable slide decks, and other resources that support teaching AI Literacy from early grades through adults

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