

Description

In 1950, Scientist Alan Turing asked a prophetic question in his landmark paper, “Computing Machinery and Intelligence”: He asked, “Can machines think?” He then proposed a thought experiment he called “The imitation game” where a human interrogator asks questions to both a human and a machine, and if the interrogator cannot distinguish between a human and a machine, then it could be said that the machine demonstrated “human-like” intelligence (Turing, 1950, p. 436). Turing wrote this paper before the term “Artificial Intelligence” had even been defined. However, at a time when Turing had to carefully differentiate between human computers (people capable of doing complex mathematical problems) and digital computers in his paper, it is astonishing to realize that he wrote:

> “I believe that in about fifty years’ time it will be possible to program computers, with a storage capacity of about 10^9 units to make them play the imitation game so well that an average interrogator will not have more than 70 per cent chance of making the right identification after five minutes of questioning.”
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> — Alan Turing, *Mind* (1950)

He predicted that, by the year 2000, we would have thinking machines that could pass his imitation game, a game that came to be known as “The Turing Test.” Turing was a few years off, but a computer simulating a 13-year-old boy named Eugene Goostman was said to fool at least 33% of the judges at the Royal Society of London in 2014 (Association, 2014).

In 1955, John McCarthy and faculty members Marvin Minsky, Nathaniel Rochester, Claude Shannon, proposed a Dartmouth Summer Research Project on Artificial Intelligence, coining the term “**Artificial Intelligence.**” Then, during that summer research project, McCarthy went on to define AI as “the science and engineering of making intelligent machines” (Teneo.ai, 2025). For most of its existence, AI has been confined to the laboratories and classrooms of those working the scientific and engineering problems that created AI. This is why the term “**AI Literacy**” was originally applied to university computer science education and required advanced programming competencies beyond the capability of most of the general population. However, when AI broke loose and became an end-user product with the launch of ChatGPT3 on November 30, 2022, AI technologies began to spread across industries like business, science, art, and education. This is when the term “AI Literacy” began to apply to end-user experience as well (Yang et al., 2025).

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Although it is important for everyone to understand some of the technical aspects of AI, most discussion of “AI Literacy” today revolves around the end-user experience of AI, not its technical aspects. The proper terminology for end-user AI literacy is “**Generative AI Literacy**” (GenAI Literacy), which is a comprehensive understanding of the practical and ethical use of generative AI models, including practical and ethical considerations, for end-users of AI. The conflation of the terms “AI Literacy” and “Generative AI Literacy” has led to divergent concepts of what it means to be “AI Literate” in today’s world and left educators wondering how to teach and apply AI literacy in their own classrooms.

This isn’t a small problem for educators; it has become a major burden. GenAI literacy has emerged as THE new skill set, and there is pressure to teach GenAI literacy in classrooms from early elementary to graduate school. GenAI literacy has become “one of the important technology skills in the twenty-first century” (MLA, 2024). However, for all the excitement around the importance of teaching GenAI literacy, the practical guidelines of how that is to be accomplished has failed to crystallize into a general consensus, with hundreds of scholarly papers touting their own version of this or that GenAI literacy framework (Yang et al., 2025). The ambiguity surrounding the GenAI literacy frameworks have, in their scope and variety, left educators scratching their heads and wondering what, if anything, will be decided in regard to the practical, everyday skills students need to acquire to succeed in the Age of AI.

Key Concepts

Although AI literacy guidelines vary widely in their understanding of essential competencies, most guidelines share the following concepts, according to Ng et. al. in “AI Literacy: An Exploratory Review,” their review of 30 different Generative AI Literacy articles, revealed the following four competencies: Knowing and Understand, Use and Apply, Evaluate and Create, and Ethics (Ng et al., 2021). It is easy to see that this research team leaned heavily on Blooms’ Taxonomy to provide the framework for these competencies, and it is important to recognize that their article came out over a year before ChatGPT3 was released. So, much of what they have to say has not been drawn from the practical use of GenAI in the classroom. However, it is helpful to have these concepts identified so clearly. As I do have practical experience using AI in the classroom, I have combined their list with my examples to assist educators in understanding how to teach these skills:

1. Knowing and Understanding how AI Works

Students should understand the fundamentals of how AI works in order to demystify it. It is important to convey to students that AI is essentially a complex algorithm that predicts the next word in a sequence. It is not conscious, it does not have true intellect, and it is incredibly fallible. Remind them that the autocorrect in their text messages is a simplified example of how AI works, and just like autocorrect, AI gets things wrong a lot.

2. Using and Applying AI

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According to Ng et. al, all 30 articles reviewed in one study highlighted the importance of learners knowing how to apply AI concepts ethically (Ng et al., 2021). Students need to learn to effectively prompt different types of GenAI systems in order to achieve a goal. This involves hands-on prompting and the use of text generators, image generators, code generators, video and audio generators.

3. Evaluating and Creating AI

This involves engaging learners in fact-checking AI output, pushing back against models, and learning to iterate, communicate, and collaborate effectively with AI. Educators need to introduce students to Socratic tutors, gap analysis, and counterarguments.

4. Ethical Issues

Recognizing and addressing algorithmic bias and malicious use of AI including data poisoning (where attackers introduce misleading, incorrect, or adversarial data into datasets). This also includes testing models to uncover bias in the data and asking questions about results.

> “People often overlook the importance of the roles of AI ethics, which is considered as extraneous or surplus to technical concerns in work settings”
>
> —Thilo Hagendorff, *Minds and Machines*, 2020

This also includes teaching students about fairness, accountability, transparency, and privacy. According to Cornell University’s Center for Teaching and Learning, “LLMs are only as inclusive and equitable as the information informing them”. Students must be aware of potential biases and limitations in GenAI content.

It is essential that we move forward to teach GenAI literacy, even as the ideas of what this means may warp and change with each new AI tool and update that comes out. An understanding of some of the most general categories can really help simplify educators’ understanding of what is meant by GenAI literacy and help our students grasp essential skills as they navigate the opportunities and pitfalls of GenAI, especially in education.

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Category

1. Thought Leadership

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