



# INTRO TO AI LITERACY

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# **An AI To Learn Institute presentation**

[www.aitolearn.org](http://www.aitolearn.org)

# Today's Itinerary

- “AI literacy” beyond tool mastery (10 min)
- Guided experience & discussion (20 min)
- Curricular application (15 min)
- Reflection/Discussion (10 min)



01

# “AI To Learn” AI Literacy Framework

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# Technology Changes How We Work



# **AI Literacy in Rapidly Changing World**

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**Forget Tool Mastery**

**Think “Disposition”**

# AI Literacy Disposition

- **Durable orientation**
- **Engaging AI for human flourishing.**
- **Cultivated** through guided experience and repeated practice.



# How do we develop this disposition?

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02

# Guided Inquiry Demo

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STARTING PROMPT

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**“What is a large language model?”**

# How did outputs vary?

A large language model, or LLM, is an AI system trained on a vast collection of text to recognize patterns in language.

When you give it a prompt, it generates a response by repeatedly predicting what piece of text is most likely to come next, based on:

- patterns learned during training,
- the wording and context of your prompt, and
- the conversation available to it.

This allows an LLM to explain ideas, summarize documents, write and revise text, translate languages, analyze information, and simulate dialogue. Its answers can appear thoughtful because language contains patterns of reasoning, explanation, and argument that the model has learned to reproduce and recombine.

However, an LLM does not retrieve a fully formed answer from a database or understand the world exactly as a person does. It can produce inaccurate or invented information, especially when the prompt is ambiguous or the subject is unfamiliar. A useful shorthand is:

An LLM is a highly sophisticated language-pattern generator—not an infallible source of knowledge.

The word “large” refers primarily to the scale of its training data, computational resources, and adjustable internal parameters.



ChatGPT 5.6 Sol: beginner friendly, short, UX focused

Google Search AI Mode: tech focused, w/sources

Gemini 3.7 Flash: tech focused, visual

what is a large language model

A Large Language Model (LLM) is a type of artificial intelligence designed to understand, process, and generate human-like text. It serves as the foundational technology behind modern generative AI tools and conversational chatbots. [The University of Arizona](#) · +2

### How LLMs Work

- **Predictive Nature:** LLMs operate as advanced statistical prediction engines. When given a prompt, they calculate probabilities to determine and generate the most logical next word in a sequence. [Dinku](#) · +2
- **Massive Datasets:** They are trained on immense collections of text data, including books, articles, code repositories, and websites. This helps them capture structural language patterns, nuance, and contextual relationships. [The University of Arizona](#) · +2
- **Transformer Architecture:** Most modern LLMs rely on a deep learning framework called the transformer architecture. It uses a “self-attention” mechanism to process entire sentences at once, allowing the model to grasp long-range context and relationships between words. [Wikipedia](#) · +4
- **Billions of Parameters:** The “large” in LLM refers to both the massive training data and the model’s parameters. Parameters are internal mathematical weights adjusted during training that act as the model’s knowledge bank. [Dinku — The Search AI](#) · +2

### Two-Step Development Process

1. **Pre-training:** The model analyzes billions of open-ended sentences to learn general grammar, vocabulary, and facts about the world.
2. **Fine-tuning:** The model is further trained on targeted datasets with human feedback to follow specific instructions, answer questions safely, and act as a helpful assistant. [Wikipedia](#) · +2

### Primary Capabilities

- **Text Generation:** Writing articles, drafting emails, or creating creative stories.
- **Summarization:** Condensing massive documents or long articles into brief bullet points.
- **Language Translation:** Translating complex text accurately across multiple languages.
- **Coding Assistance:** Writing, debugging, and explaining computer software code. [The University of Arizona](#) · +4

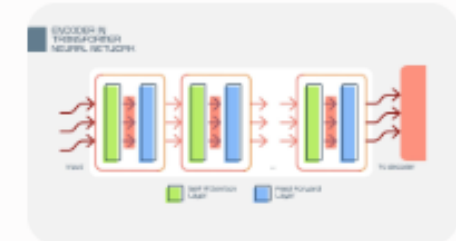
### Common Limitations

- **Hallucinations:** LLMs do not truly “know” facts; they predict text patterns. This means they can confidently present false information as true fact. [The University of Arizona](#) · +2
- **Data Bias:** Because they learn from human-created internet text, they can replicate and amplify social biases present in their training data. [Wikipedia](#)
- **Lack of Real Understanding:** They do not possess consciousness, intentions, or true understanding of the world, relying purely on mathematical correlations. [YouTube: WhatIsAI.com](#)

Are you interested in learning about a specific LLM (like ChatGPT, Claude, or Gemini), or would you like to explore the hardware and computing power required to train them? [The University of Arizona](#) · +1

[Show all](#)

A Large Language Model (LLM) is a type of artificial intelligence model designed to understand, summarize, generate, and predict human language. At its core, an LLM is a deep neural network trained on vast amounts of text data to recognize underlying linguistic patterns, syntax, semantic relationships, and contextual meaning.



## Key Mechanics Behind LLMs

- **The Transformer Architecture:** Nearly all modern LLMs rely on the Transformer model. Transformers use a mechanism called **self-attention** to weigh the relevance of different words across an entire sentence simultaneously, rather than processing words strictly sequentially.
- **Tokenization & Embeddings:** Text is broken into smaller numerical fragments called **tokens** (words, subwords, or characters) and mapped into high-dimensional vector spaces (embeddings), allowing mathematical calculation of semantic similarity.
- **Next-Token Prediction:** During self-supervised pre-training, the model learns by predicting the most statistically probable next token given the preceding sequence.
- **Fine-Tuning & Alignment:** Raw base models undergo post-training—such as Supervised Fine-Tuning (SFT) and Reinforcement Learning from Human Feedback (RLHF)—to follow instructions, maintain conversational flow, and minimize harmful or inaccurate outputs.

## Core Characteristics

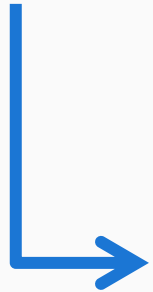
| Attribute             | Description                                                                                                                            |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Scale ("Large")       | Built with tens of billions to trillions of parameters (the adjustable weights connecting simulated neurons).                          |
| Generative Capability | Drafts essays, analyzes code, translates languages, synthesizes complex concepts, and structures unstructured data.                    |
| Emergent Abilities    | Exhibits in-context reasoning, step-by-step problem-solving, and role-based adaptation without explicit reprogramming.                 |
| Limitations           | Prone to hallucinations (generating plausible but incorrect information), reasoning blind spots, and bias present in training corpora. |

Want to explore how the self-attention mechanism works step-by-step?

Yes

# Good, Bad and Ugly

- GOOD – What is clear, useful, or interesting?
- BAD – What is weak, confusing, or incomplete?
- UGLY – What is hard to interpret or assess?



## **Iterative prompting exercise:**

- Choose an aspect of the returned response
- Write a prompt to get more information, clarification, etc.

# Working with AI Is Iterative.





03

# Curricular Application

A Modular Approach

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## **Four Habits That Cultivate AI Literacy Disposition**

- **Purposeful Curiosity**

Beginning with a human purpose and determining what role AI should play.

- **Critical Judgment**

Examining outputs for accuracy, relevance, assumptions, limitations, and appropriateness.

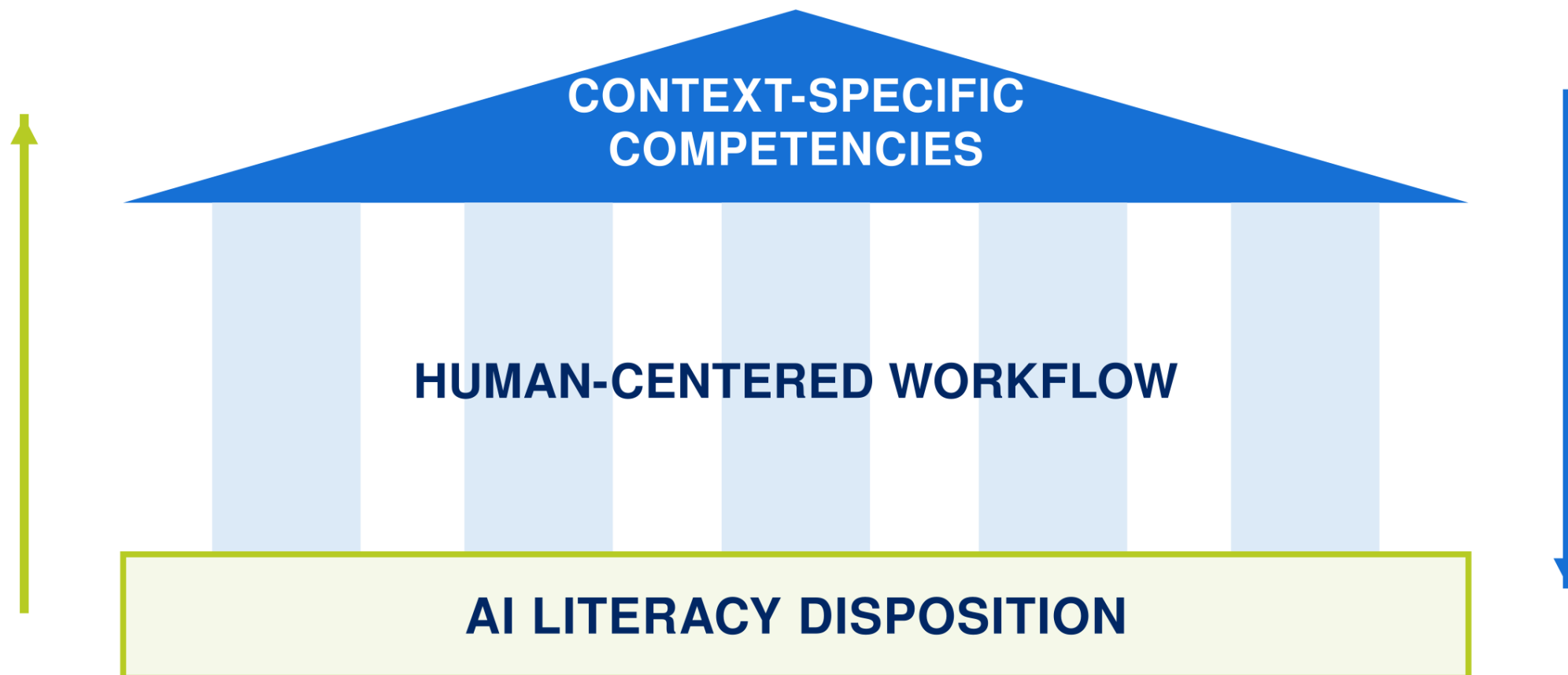
- **Adaptive Practice**

Changing prompts, context, strategy, or tool use in response to what happens.

- **Responsible Ownership**

“First & Last Call” principle, remaining accountable for the process, decisions, and final work.

# AI To Learn Model (quick guide available)



# Three Foundation Modules

| Module Title                       | Learning Focus                                                | Core Topics                                                   | Learning Movement         |
|------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------|
| 1. What Is a Large Language Model? | Inquiry-based understanding of technology at elementary level | LLM’s key characteristics, behavior, LLM inquiry exercise     | Observe → Connect → Infer |
| 2. Iteration Is Everything         | AI-assisted inquiry paths, iteration, workflow analysis       | Prompting, context building, hypothetical assignment exercise | Plan → Interact → Adjust  |
| 3. Responsible Ownership           | Place of human judgment and agency in realistic workflow      | Authorship/ownership, academic integrity, scenario exercise   | Consider → Decide → Act   |

## **Attention-Driven Module Design (Stalbert 2025)**

### ❖ **Inductive Learning – hands-on experience**

- Guided inquiry & analysis
- From experience to inferred pattern
- Power of “aha!” moment

### • **Deductive Learning – videos and readings**

- Conceptual overview, theory, rules, principles
- Expert opinions, technical analysis
- Hard to relate, instruction-heavy

## Start Small. Start Now.

- Imagine one place in your course where students may encounter AI through a guided activity.
- Brainstorm with ChatGPT - upload quick guide and syllabus

## Sources

- Stalbert, Malik. 2025. *Attention First: A Human Framework for Learning, Creation, and Development in the Age of AI*. Independently published manuscript, Kindle Direct Publishing.
- My AI work website: [www.aitolearn.org](http://www.aitolearn.org)

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## Other Resources

- AI To Learn Institute website: [www.aitolearn.org](http://www.aitolearn.org)
- Workshop on Aug 20 (Foundation Module 2)



[www.aitolearn.org](http://www.aitolearn.org)



04

# Discussion

Exercise takeaways, future applications

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