



Advancing Together: AI Tools for the Education Community

AMS IFTT Tech Group 2023-2024

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Join us on a new exploration for Montessori

We were thrilled to see so many engaged participants at the Open Forum: Artificial Intelligence (AI) and its Role in Education on July 24th. This timely discussion made clear that support is crucial as we navigate this complex topic. There is much to consider regarding AI's growing role in education as the new school year begins. We have compiled suggestions for educational, engaging AI resources. These include standards-aligned curriculum from the nonprofit aiEDU <https://www.aiedu.org>, and courses from top universities like MIT and Stanford for high school students. Christian Pinedo of aiEDU shared wonderful insights from the frontlines of this rapidly evolving field.

The website and course recommendations are informational only, and are not official endorsements by the AMS, but we hope they spark ideas. As we make decisions ahead, please know that you have our full support.

As technology rapidly changes our world, we must remain vigilant gatekeepers of the child's authentic developmental needs. Prudent integration of technology should enhance, not supersede, human bonds and mentorship. Innovation brings promise yet must align with the developing child. As stewards of posterity, we must carefully evaluate each step, balancing enduring wisdom with judicious change. While progress is inevitable, our purpose remains - to ignite potential in each unfolding mind through guidance and virtue. Their gifts hint at advances to come, if nurtured wisely.

Students and Guides as Citizen Scientists

For over 110 years, Montessori administrators and guides have followed Maria Montessori's core principles of observing and following the child. As we enter an age increasingly influenced by artificial intelligence, it is crucial that we stay grounded in this scientific, child-centered approach. Just as Maria Montessori studied child development to inform her educational philosophy, we must carefully study and evaluate how emerging technologies impact children's growth. However, it is vital that we now partner with the child in these experiments and observations.

With compassion and open-mindedness, whether guides or students, we can embrace our role as citizen scientists, working together to create authentic and grounded digital literacy and citizenship. With meticulous observation and research, we can model integrity, discipline, and care in our shared journey of lifelong learning.

Though the tools we use will change, our commitment to Montessori principles, and to each child's intellectual, emotional, and spiritual flourishing remains steadfast.

Tips for vetting AI education platforms:

- Read as much as you can about AI from reputable sources: UNICEF <https://www.unicef.org/globalinsight/featured-projects/ai-children>, World Economic Forum <https://www.weforum.org/reports/artificial-intelligence-for-children>.
- AI and Our Kids: Common Sense Considerations and Guidance for Parents, Educators and Policymakers 2023
- Look for a platform that has been vetted by a reputable organization. There are a number of organizations that review AI education platforms such as AI4K12 <https://ai4k12.org>, and the Good Tech Alliance <https://techforgoodinstitute.org>.
- Talk to other parents who have used the platform. They can give you their own feedback on the platform's safety and effectiveness.
- Try the platform yourself. This will give you a chance to see how it works

Ideas for AI website, programs, and Courses:

Second Plane 6-12 Years		Third Plane 12-18 Years	
<p>Alice https://www.alice.org 3D simulation environment for creating interactive animations and learning AI concepts.</p>	<p>Code.org https://code.org Free coding resources and tutorials for kids to learn about AI.</p>	<p>Khan Academy https://www.khanacademy.org/khan-labs Free online courses on AI and machine learning.</p>	<p>CodeHS https://codehs.com/course/intro_ai/overview Platform with AI and machine learning courses designed for high school students.</p>
<p>DreamBox Learning Math https://www.dreambox.com/ Adapts math lessons in number sense, operations, algebraic thinking based on student needs.</p>	<p>Hopscotch https://www.gethopscotch.com/educators Game-based learning platform to develop coding and AI skills.</p>	<p>MIT App Inventor https://appinventor.mit.edu Tool for creating Android apps and learning about applying AI.</p>	<p>DeepLearning.AI https://www.deeplearning.ai Online deep learning courses.</p>

<p>Lexia Core5 https://www.lexialearning.com Provides interactive reading instruction and assessment for individual students.</p>	<p>Newsela https://newsela.com/ Adapts instructional content to each student's reading level using AI.</p>	<p>Udacity https://www.udacity.com Online nanodegrees in AI and machine learning to develop job skills.</p>	<p>MIT 6.034 https://courses.csail.mit.edu/6.034s/about.html - Introductory machine learning course from MIT.</p>
<p>Scratch Jr. https://www.scratchjr.org Visual programming language for creating interactive stories, games, and animations.</p>	<p>Tynker https://www.tynker.com/school Visual programming for kids to learn AI through tutorials and projects.</p>		<p>Stanford CS106A https://web.stanford.edu/classes/archive/cs/cs106a/cs106a.1214 Intro course on artificial intelligence from Stanford.</p>

Adults	All	Prompt Engineering Training Needed*	
<p>AI4K12 https://ai4k12.org Workshops on AI topics tailored for K-12 teachers. Free CEUs.</p>	<p>FutureLearn https://www.futurelearn.com Examines ethical and policy implications of using AI in schools.</p>	<p>aiEDU https://www.aiedu.org Non-profit organization offering free AI curriculum aligned with standards. Designed to be child safe.</p>	<p>Anthropic Claude 2 https://claude.ai A large language model assistant focused on being helpful, harmless, and honest</p>
<p>Coursera https://www.coursera.org How to use AI to improve teaching practice.</p>	<p>Harvard https://cyber.harvard.edu Free course on responsible and ethical AI instruction. Certification included.</p>	<p>DragonBox https://dragonbox.com Teaches early math skills like addition, subtraction, fractions. Aligned to Montessori hands-on math learning.</p>	<p>Google BARD https://bard.google.com A large language model conversational AI</p>
<p>Element AI https://www.elementsofai.com https://www.coursera.org/learn/prompt-engineering Covers AI basics. Certification of completion included.</p>	<p>Stanford Online https://online.stanford.edu Range of free AI and machine learning courses. Certificates available.</p>	<p>Inspirit AI https://www.inspiritai.com Online AI courses for high school students taught by Stanford/MIT alumni.</p>	<p>Open AI ChatGPT https://chat.openai.com AI language model developed for conversation.</p>

***Prompt Engineering:**

Prompt engineering is the process of carefully constructing and optimizing prompts to get an AI system to produce a desired response or behavior, for example:

- I am a 6-year-old child: Tell me an imaginative story about a day in the life of a honeybee in her hive.
- I am a 12-year-old student: Explain how bees communicate where to find pollen and nectar using their waggle dance.

- I am a 15-year-old student: What are 10 fascinating things to know about the roles of different bees in a colony for a biology project?
- I am an 18-year-old student: What emerging careers could help address threats to bee populations and promote ecological health? Assess their potential impact.
- Teacher: How can I design engaging interdisciplinary lessons on bees to promote creativity and critical thinking?
- Researcher: Analyze the compounding factors contributing to bee decline, and propose evidence-based solutions that could help reverse this trend.
- Administrator: Assess the effectiveness of initiatives meant to protect bees. Recommend comprehensive policies that could better support pollinator health in our communities.

Adult Reading List - Artificial Intelligence:

- Life 3.0: Being Human in the Age of Artificial Intelligence, Max Tegmark, <https://www.amazon.com/Life-3-0-Being-Artificial-Intelligence/dp/1101970316>
- Superintelligence: Paths, Dangers, Strategies, Nick Bostrom, <https://www.amazon.com/Superintelligence-Dangers-Strategies-Nick-Bostrom/dp/1501227742>
- The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies, Erik Brynjolfsson and Andrew McAfee, (Maria Montessori is mentioned in Chapter 12 - Learning to Race with Machines) <https://www.amazon.com/Second-Machine-Age-Prosperity-Technologies/dp/0393350649>

We would love to know your thoughts about this document or any ideas that you have regarding AI. You can use this AMS Connect thread or reach out to us privately at amsifttech@gmail.com.