EMPOWERING LIFELONG LEARNING

AI Guidance for Enhancing K-12 and Library Education

Wisconsin Department of Public Instruction
Jill K. Underly, PhD, State Superintendent

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Version History

Given the quickly evolving landscape of artificial intelligence (AI) technology, it is expected regular updates will be made to this document to incorporate the most recent guidance and any policy developments or changes at both state and national levels. To facilitate the tracking of these updates, a summary table has been integrated into the document. This table specifically outlines the updates and changes made in each new iteration, providing a clear and accessible record of the document's progression.

Date	Description of Changes	Version
6/2024	Initial document created	1.0

Roadmap:

Looking forward to the next iteration of this resource, this committee will be adding members from different partner groups, creating a home for the resource in WISELearn, and unveiling that next iteration at SLATE 2024.

Additions that are upcoming include links to specific resources, Professional Development presentations for districts to utilize, and templates of policies, prompts, etc. This next iteration will also include specified pathways and resources for elementary educators, district & school administrators, middle & high school departments, parents & community members, school board members, fine arts educators, special educators, instructional coaches, and school and public library personnel.

Finally, this resource will continue to be monitored and updated when there are new advances in AI Technology that affects schools and libraries, when state and/ or federal policies are enacted relating to AI, and/or when new trends emerge around AI in education.

Foreword

Since before the global pandemic, Wisconsin's educators have been dedicated to effectively integrating instructional technology to transform educational delivery. With the advent and growing integration of Artificial Intelligence (AI) in K12 education, new challenges have emerged. The responsible, ethical, and safe use of AI in teaching and school operations statewide not only embodies our commitment to innovation but also enhances educational pathways across Wisconsin's schools, libraries, and communities. The Wisconsin Department of Public Instruction proudly accepts its role in providing guidance and recommendations for this integration, ensuring that AI tools are used to their full potential to support educational excellence.

The success of this initiative hinges on the active involvement and support of students, families, teachers, and community members throughout the state. By prioritizing human inquiry and reflection in the use of AI, we aim to maintain a balance where technology aids learning while human insight remains paramount. This strategy ensures that our educational practices remain equitable and sustainable, preparing our students for a future where technology is central, and Wisconsin continues to be a leader in educational innovation and quality.

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Executive Summary

Wisconsin's K-12 and Library AI Guidance

The Wisconsin Department of Public Instruction has developed this evolving guidance document to assist K-12 educators, librarians, students, and administrators in effectively integrating Artificial Intelligence (AI) technologies within educational settings and public libraries. This guidance is regularly updated to ensure it aligns with the latest advancements in AI technology, ethics, and policy, promoting the responsible use of AI to enhance personalized learning, foster critical thinking, and improve educational outcomes.

Key goals include supporting districts in their work toward developing policies for ethical AI use, enhancing data privacy, and adopting a human-centered approach to AI application. The document emphasizes understanding AI formats like Machine Learning (ML) and Generative AI (GenAI), including tools such as ChatGPT and DALL-E. A summary table of updates (version history) will be maintained to ensure partners have access to the most current information.

This guidance addresses concerns such as equity, ethical use, and data privacy, advocating for responsible AI integration. It outlines strategies for engaging diverse partners, including educational sessions and continuous communication, to foster an inclusive approach to AI. Additionally, it highlights the need for infrastructure upgrades and professional development to support effective AI use in education.

Core Concepts and Goals

AI in K-12 Education and Lifelong Learning through Public Libraries

Artificial Intelligence (AI) encompasses technologies and systems capable of processing vast amounts of information, sensing, reasoning, acting, or adapting like humans, but with the speed and accuracy of computers. Machine Learning (ML), a subset of AI, involves machines autonomously extracting knowledge from data, learning from it, and making informed decisions. Generative AI (GenAI) uses ML to create new content, such as images, text, audio, and video, based on user inputs. (Google, 2024)

AI as a Tool

AI technologies, particularly Generative AIs, can enhance personalized learning and educational exploration. Quality of AI output depends on the quality of input, necessitating explicit teaching on using AI effectively.

Critical Thinking with AI

AI stimulates students' curiosity and adaptability in problem-solving while teaching them to reflect on AI's limitations. AI offers both opportunities and challenges that users can consider and learn from.

AI as a Partner

AI is to be considered a "partner" in the learning process (where/when appropriate), and not a total solution to educational needs. AI supports human teaching and learning but cannot replace educators.

AI as a Powerful Emergent Technology

Whenever burgeoning and influential technologies are introduced to society, educators, library users, and students have a chance to weave new resources into their learning and daily life while the technologies are at their most foundational. Generative AI is expected to grow significantly in the coming years, and our Wisconsin residents have a unique opportunity to grow alongside it and learn how to responsibly use it as an emergent technology.

Inquiry-Based Learning

AI aids in developing research skills and knowledge discovery, enhancing students' research capabilities; it presents new pathways for critical thinking, analysis, and information examination.

Human-Centered AI Approach (H > AI > H)

The "H > AI > H" (Human > Artificial Intelligence > Human) mnemonic tool is a reminder that responsible AI use begins with a carefully developed prompt to garner a relevant AI response, followed by examining the information gathered and then implementing it in practice. This three-part, simple-to-remember concept (borrowed from Washington State's AI guidance) can be memorized and utilized by every Wisconsin resident with ease; just remember "H > AI > H"!

Partner Engagement and Communication

Engaging all partners is essential for successful AI integration in schools. This includes:

Parents/Guardians
Host informational sessions and workshops to educate parents about AI technologies, their benefits, and potential concerns. Establish regular communication channels to provide updates and resources.

Students
Organize presentations and student-led discussions to introduce AI concepts and applications. Incorporate AI-related projects into the curriculum.

Administrators
Highlight AI's potential to support teachers, staff, and students. Offer professional development opportunities focusing on integrating AI tools into instructional practices.

Educators
Provide resources such as online courses, instructional materials, and lesson plans demonstrating how AI can enhance student learning. Encourage experimentation with new AI tools.

School Board Members
Provide presentations on AI's potential benefits, ethical considerations, and implementation strategies. Facilitate open dialogues to address concerns and foster collaboration.

Community Members
Use local media outlets and community organizations to share updates and success stories about AI integration. Encourage community participation in volunteer opportunities, mentorship programs, or advisory boards related to AI.

Library Staff and Patrons
Offer workshops, talks, and educational programs exploring AI's implications. Provide access to resources such as books, videos, and online databases. understand AI concepts and their societal impact. Facilitating community dialogues where patrons can share perspectives, concerns, and ideas about AI empowers them to navigate AI's opportunities and challenges, fostering a more inclusive and knowledgeable community.

Ethics & Data Privacy

Integrating ethical considerations into every stage of AI use in education is essential. Safeguarding student data is also imperative. Districts should review existing policies and processes to incorporate AI-related language that reinforces ethical considerations as well as data privacy concerns in key areas.

Current AI is built upon a knowledge-base containing systemic problems, including bias and inaccuracies. Although eliminating bias from the tools is not within the scope of K-12 use, being able to identify bias is imperative. Educators should work to promote equity among and between learners and take appropriate measures to mitigate bias.

Balancing the benefits and risks of AI, addressing biases and promoting equity among learners while protecting the data privacy of users is paramount to success when utilizing AI as a tool. Promoting information and media literacy efforts to guide staff and students in critically examining AI-generated results as well as educating all about the inherent risks to data privacy while utilizing AI will help ensure safe and engaging use of AI in educational spaces like schools and public libraries.

Empowering Minds, Protecting Privacy: Ethical AI Practices

- Responsible Acceptable Use Policies
- Code of Conduct & Academic Integrity Policies
- Digital Citizenship Standards & Curriculum
- Transparency & Consent
- Data Encryption & Storage
- Copyright Policies & Citation Guidelines
- Digital Equity & Student Access Policies
- Compliance with Family Educational Rights & Privacy Act (FERPA)
- Vendor Compliance
- Continuous Monitoring & Improvement
- Compliance with Children's Online Privacy Protection Act (COPPA)

Security & Infrastructure

Secure and successful AI integration requires robust infrastructure, technology, and accessibility. Review the essential components to ensure the safety of student and staff privacy, when implementing the use of AI.

Essential Components:

	Restrict access to student data to authorized personnel.
	Remove personally identifiable information from datasets.
	Conduct comprehensive evaluations of AI implementations. Define specific retention periods for student data.
	Provide comprehensive staff training on student data privacy.
	Develop and maintain a robust data breach response plan.
	Invest in high-speed internet infrastructure.
	Use cloud platforms for flexible computing power & storage.
	Deploy scalable and secure data storage solutions.
	Invest in user-friendly AI development platforms & frameworks.
	Ensure compatibility between AI applications & LMS platforms.
	Assess the compatibility of existing hardware infrastructure
	Prioritize the development of AI solutions that comply with accessibility standards.

Professional Development

Training for K12 and Public Library Faculty

Professional development for K-12 educators and public library personnel is crucial for effectively integrating artificial intelligence into their practice. It equips them with the necessary skills and knowledge to utilize AI tools responsibly and innovatively, enhancing teaching and library services. Continuous training ensures they stay updated with the latest advancements and ethical considerations, fostering an environment where AI can be used to its fullest potential to benefit students and patrons.

There are 5 pillars involved in this AI Professional Development that must be addressed.

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5 Training Pillars for K12 Educators

1. **Understanding AI and Machine Learning Basics**
2. **Integrating AI into Subject Areas**
3. **Hands-On AI Experiences**
4. **Collaborations and Networking**
5. **Continuous Learning and Adaptability**

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1 Understanding AI and Machine Learning Basics

Educators need foundational knowledge about AI and machine learning, including how these technologies work, their capabilities, and their limitations. This foundational knowledge helps teachers feel more confident incorporating AI topics into their curriculum.

- Online tools and platforms that could be utilized to facilitate effective learning in this space include but are not limited to the following:

- **Google AI Education** - Google provides various resources and tools aimed at educating about AI, including simple explanations of machine learning concepts and interactive experiments using AI.
- **Microsoft Learn** - Offers learning paths specifically designed around AI education, including modules on AI ethics, machine learning, and data science.
- **TED-Ed** - Features engaging educational videos that can introduce AI and machine learning concepts in a very accessible way, perfect for sparking interest among educators.

Integrating AI into Subject Areas

Professional development should include strategies for integrating AI concepts into various subject areas, not just computer science. This could involve using AI examples in math problems, discussing the impact of AI on historical events, or exploring AI in science projects.

- Online tools and platforms that could be utilized to facilitate effective learning in this space include but are not limited to the following:
  - **Desmos** - An AI based graphing calculator that can be used to demonstrate the power of algorithms and data in solving complex math problems.
  - **PBS LearningMedia** - Offers a variety of resources, including interactive lessons on various subjects including technology and society, which could be used to discuss the historical impact of AI and its implications for the future.
  - **Zooniverse** - A platform for citizen science projects that often use AI to help analyze large sets of data, making it a great tool for science educators to explore real-world applications of AI.

Hands-on AI Experiences

Teachers benefit from hands-on experiences with AI tools and platforms, which they can then bring into the classroom. This includes simple programming environments, AI experiment tools, and resources that allow students to interact with AI technologies.

- Each of these tools provides an engaging way for students to interact directly with AI technologies, enabling a deeper understanding of the subject through interactive learning and creativity:
  - **Google AI Experiments**: Google's platform for AI experiments makes AI accessible through hands-on projects. Tools like "Teachable Machine" allow students to train simple models with a webcam.

- **Machine Learning for Kids**: An easy-to-use tool to create machine learning projects that are linked with Scratch, providing a great way to introduce AI concepts to students.
- **TensorFlow Playground**: An interactive visualization of a neural network that users can tweak to better understand the basics of machine learning.

Collaboration and Networking

Building communities of practice around AI education allows educators to share resources, ideas, and experiences. Training should encourage participation in networks, workshops, and conferences dedicated to AI education.

- Here are some notable educator networks, workshops, and conferences focused on AI education or integrating AI into K-12 education based in Wisconsin:
  - **SLATE--The SLATE Annual Conference**, which stands for School Leaders Advancing Technology in Education, is a significant educational technology event held at the Kalahari Resort in Wisconsin Dells, WI. This conference focuses on the use of technology in education, attracting educators, administrators, and technology leaders. It includes keynote speeches, a variety of sessions on educational technology, and opportunities for networking and professional development. The conference is known for its comprehensive agenda that covers innovative teaching resources and cutting-edge technologies, making it a valuable event for professionals looking to enhance their educational practices through technology.
  - **CESA based workshops & trainings**--all 12 CESAs across the state of Wisconsin take part in the CESA Instructional Technology Services Committee (CITSC) which is a hub for professional learning opportunities that promote and enhance digital learning proficiencies (including AI in Education) for Wisconsin Educators. Reach out to your local CESA for more information and program scheduling.
  - **WEMTA--the Wisconsin Educational Media & Technology Association** is a professional association in Wisconsin dedicated to supporting librarians and educators. Its focus is on advancing educational and media technology initiatives and fostering professional development through conferences, workshops, and other resources.
  - **WDLC--The Wisconsin Digital Learning Collaborative** is an initiative established to provide equitable access to high-quality online education in Wisconsin. It serves as a central resource for school districts, CESAs,

charter schools, and private schools, offering support in online and blended learning practices. The WDLC collaborates with the Wisconsin Virtual School, Wisconsin eSchool Network, and the Department of Public Instruction to deliver comprehensive online courses, professional development, and planning strategies for schools and districts. The collaborative aims to share resources, implement quality learning strategies, and foster a statewide community focused on enhancing online and blended educational practices.

Continuous Learning and Adaptability

Given the rapid development of AI, educators must adopt a mindset of continuous learning. Professional development should emphasize resources for staying updated on AI advancements and pedagogical approaches, highlighting the importance of adaptability in teaching practices.

- These resources provide information on the latest trends in AI, offer professional development opportunities, and share effective teaching strategies that incorporate AI technology:
  - **ISTE (International Society for Technology in Education**) - ISTE offers a variety of resources, including webinars, courses, and articles that focus on integrating technology into education effectively. Their offerings are updated regularly to include the latest in educational technology, including AI.
  - **EdSurge** - This site provides news, research, and tools for educators. They have a dedicated section on AI in education which covers the latest developments and practical ways to use AI tools in the classroom.
  - **AI4K12 Initiative** - This initiative is working to develop guidelines for what students should know about AI. It provides resources and curricula recommendations to help teachers understand and teach AI concepts at appropriate grade levels.

Introducing Educators and Library Professionals to available tools and resources for each pillar of AI will allow for personalized professional development that fits the needs of each individual and their role.

Curriculum and Pedagogy

Human Capacity

In preparing educational communities to be responsible AI users, it is essential to create instructional practices and implement policies that model the responsible and intentional use of AI technology. Providing staff training and staying abreast of the technology is essential to the successful use of AI in classroom settings.

AI Literacy Across Grade Spans

Elementary

Engage parents and caregivers in understanding how AI is used in the classroom and how it can support their child's academic growth. It is important that students use real-world AI applications during instruction. This practice fosters hands-on experience and critical thinking regarding AI generated content..

Middle Grades

Equip educators to instruct and support students' independent, responsible, and safe use of AI technology. Extending beyond the classroom to include libraries, homes, and peer interactions. AI should be taught across disciplines, combining it with subjects like mathematics, computer science, social studies, and ethics.

High School

Provide guidance to help students embrace AI as a learning partner to navigate academic and social communities. AI should be integrated into all subjects and could also be taught as a standalone subject where students learn to build and understand AI systems, maximizing the potential of AI in educational settings. Students, educators, and families should understand how to ethically use AI technology and understand the benefits that AI provides to increase creativity, collaboration, access, critical thinking, and research.

Monitoring, Evaluation, and Continuous Improvement

Careful monitoring and continuous improvement are essential for harnessing AI's power responsibly and effectively.

Monitoring:

- Track Usage Data: monitor how students and teachers interact with AI tools. This includes frequency, types of interactions, and time spent.
- Identify bias: Look for instances where AI recommendations or content may favor certain demographics or learning styles.
- Privacy considerations: Ensure student data collected by AI systems is secure and anonymized according to regulations.

Evaluation:

- Learning outcomes: Compare student performance using AI tools with traditional methods. Consider standardized test scores alongside factors like student engagement and critical thinking skills.
- Teacher feedback: Gather feedback from teachers on how AI integration is impacting their workflow, classroom dynamics, and overall effectiveness.
- Student surveys: Survey students about their experience with AI tools. Gauge their satisfaction, perceived learning gains, and suggestions for improvement.

Improvement:

- Iterative development: Based on usage data and feedback, refine the policy and guidance to better address needs for staff and students.
- Teacher training: Provide ongoing training for teachers of effectively integrating AI tools into their lesson plans and maximizing their potential.
- Focus on fairness: Develop strategies to mitigate bias in AI and ensure all students have equal access to the benefits of AI-powered learning.

Additional tips:

- Start small: Begin by implementing AI in a controlled setting before a full-scale integration.
- Focus on specific goals: Clearly define the objectives and roles AI will have in the district and classroom, such as personalized learning or early intervention.
- Collaboration is key: Involve educators, students, and parents in the implementation of AI to create a well-rounded experience.

By following these steps, you can establish a framework for monitoring, evaluating, and continuously improving the use of AI in an educational setting. Remember, AI is a tool to enhance learning, and its success hinges on ongoing monitoring and refinement.

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