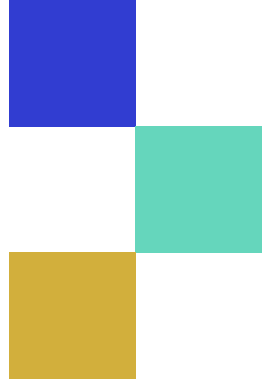# NATIONAL PARENTS UNION | CENTER FOR POLICY & ACTION

THE IMPACT OF AI

# The Benefits and Challenges That Lie Ahead for AI in Education

FOREWORD

ARIEL TAYLOR SMITH
Senior Director, NPU Center for Policy & Action

As someone who grew up in the first generation of teenagers to have flip phones, I've witnessed the evolution of technology and how it is intertwined into our daily lives firsthand. From Encyclopedia Britannica to AOL dial-up to having Google in your kitchen, the pace at which technology has evolved is remarkable. As this rapid advancement continues, it is no surprise that we are now in an era where Artificial Intelligence (AI) can diagnose brain cancer[1] and write a paper for a struggling reader.

As we wander into this new era of technology, it is imperative that we have the guardrails in place to protect the integrity of intellectualism, and that we use tools to expand our thinking rather than substitute for it - **especially as it applies to K-12 learners.**

The National Parents Union (NPU) recently conducted our nationwide parent poll and found that overwhelmingly- parents want more information about AI in schools. This paper is for parents who are wondering how AI might support their child's learning, including the **benefits and challenges that likely lie ahead, the ethical considerations**, and the **impact AI could have on learning experiences, accommodations, and our future workforce needs.**
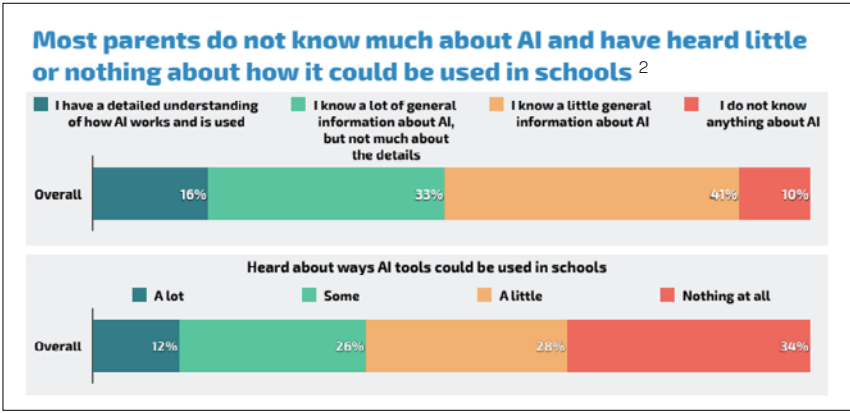
As we move into a new era of technological support and enhancements and access to information, we must stay vigilant to protect human rights and create structures to ensure equity and opportunities to enhance the human experience.
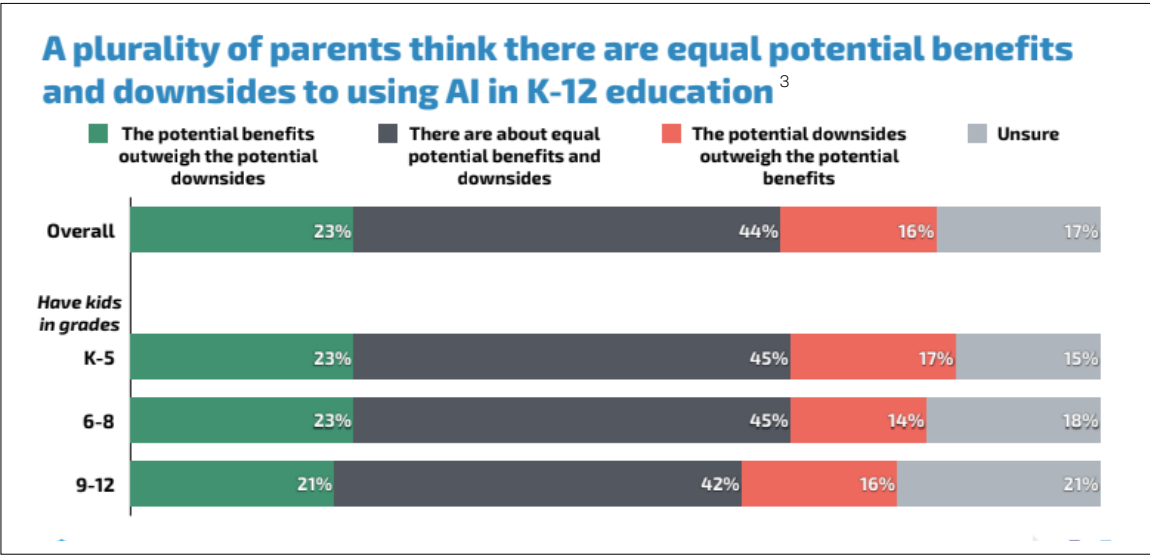
Keep Thinking Friends,

Ariel Taylor Smith

INTRODUCTION

Artificial Intelligence (AI) has become a pervasive force in today's world, reshaping industries and daily life. In the realm of education, AI offers a plethora of opportunities to enhance the learning experience. This paper examines the profound impact of AI in K-12 education, with a particular focus on the possibilities, challenges, ethical considerations, and future implications for students and educators. This paper is for parents, who are standing on the precipice of a new world alongside their children and wondering what, exactly, they need to do to prepare.This paper is for teachers and administrators who are wondering how AI will change the way they teach and this paper is for policy makers who are inevitably going to be faced with the task of regulating AI.

A plurality of parents think there are equal potential benefits and downsides to using AI in K-12 education [3]

	The potential benefits outweigh the potential downsides	There are about equal potential benefits and downsides	The potential downsides outweigh the potential benefits	Unsure
Overall	23%	44%	16%	17%
Have kids in grades				
K-5	23%	45%	17%	15%
6-8	23%	45%	14%	18%
9-12	21%	42%	16%	21%

Artificial Intelligence (AI) refers to the development of computer systems that can perform tasks that typically require human intelligence. These tasks include learning, reasoning, problem-solving, perception, and understanding natural language. AI systems are designed to analyze and interpret data, adapt to changing circumstances, and improve performance over time. The goal of AI is to create machines and software that can mimic cognitive functions, allowing them to automate processes, make decisions, and interact with their environment in ways that traditionally require human intelligence. AI encompasses a range of technologies, from machine learning and natural language processing to computer vision and robotics, with the overarching objective of enabling machines to exhibit intelligent behavior.[4]

AI has the capacity to revolutionize teaching and learning, offering personalized experiences, adaptive learning systems, and innovative solutions to age-old challenges. However, ethical concerns, data privacy, and the potential for bias in AI systems necessitate vigilant oversight.

As we embrace the potential benefits of AI in schools, it is crucial to ensure that its implementation aligns with educational goals and values. Schools and school districts must invest in robust professional development programs to equip educators with the skills needed to harness AI effectively in the classroom. Additionally, policymakers should formulate clear and equitable AI policies that guide its responsible integration into education. Striking a balance between the transformative power of AI and safeguarding the principles of fairness, inclusivity and privacy will be key to unlocking its full potential in shaping the future of education.

THE POSSIBILITIES THAT LIE AHEAD

Time and Efficiency: A teacher can now use Chat GPT to help generate ideas for learning accommodations and differentiation techniques.[5] They can write assignments and find readings that are accessible to struggling readers by calibrating grade levels Educatorscan utilize best practices to develop social-emotional learning supports for students and even draft a classroom newsletter in Chat GPT.

The National
Parents Union

THE IMPACT
OF AI:
The Benefits
and Challenges
That Lie Ahead
for AI in
Education

> **(AR) You**
>
> Write a newsletter to a forth grade class that wishes kids a happy January, reiterates our goals for the year, reminds families to meet their at home reading goals, reminds them that the weather this week is snowy so to send snowpants and tells them about pajama day on Friday.
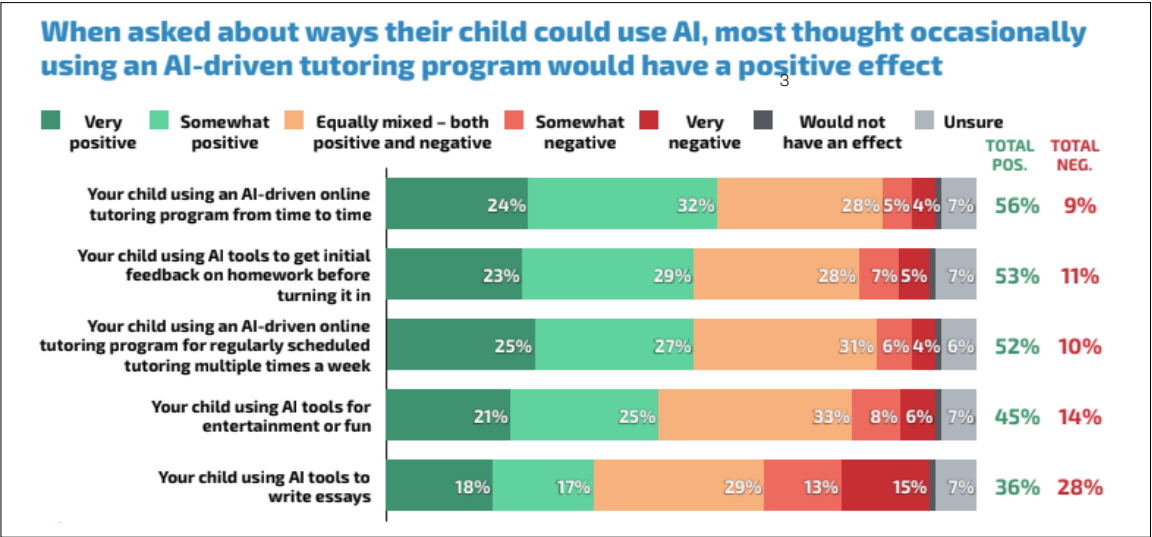
Enhanced Abilities to Connect with Families: Artificial Intelligence apps can draft notes home to parents in seconds and in multiple languages. As AI tools become available in schools, training around best practices in utilizing AI interpretation and translation should be widely available to teachers.

Artificial Intelligence as a 1:1 Tutor: AI can offer personalized and adaptive learning experiences tailored to individual needs. By leveraging AI-powered educational tools, students can receive targeted interventions and support in areas where they struggle, fostering a more customized approach to their learning journey. These AI tutors can assess students' strengths and weaknesses, adapt their teaching strategies accordingly, and provide real-time feedback, enabling a dynamic and responsive educational experience.

AI Adaptive Learning Environments: Administrators and teachers can now utilize machine learning algorithms to analyze a student's performance, preferences, and progress in real time. By continuously assessing strengths and weaknesses, AI adapts the content, pace, and style of instruction to optimize learning outcomes. This personalized approach fosters a dynamic and responsive learning experience, catering to diverse learning styles and abilities. Adaptive learning environments hold the promise of addressing the unique needs of each learner, promoting engagement, and enhancing overall educational effectiveness.

When asked about ways their child could use AI, most thought occasionally using an AI-driven tutoring program would have a positive effect [3]

Legend: Very positive | Somewhat positive | Equally mixed – both positive and negative | Somewhat negative | Very negative | Would not have an effect | Unsure

	Very positive	Somewhat positive	Equally mixed	Somewhat negative	Very negative	Would not have an effect	Unsure	TOTAL POS.	TOTAL NEG.
Your child using an AI-driven online tutoring program from time to time	24%	32%	28%	5%	4%		7%	56%	9%
Your child using AI tools to get initial feedback on homework before turning it in	23%	29%	28%	7%	5%		7%	53%	11%
Your child using an AI-driven online tutoring program for regularly scheduled tutoring multiple times a week	25%	27%	31%	6%	4%		6%	52%	10%
Your child using AI tools for entertainment or fun	21%	25%	33%	8%	6%		7%	45%	14%
Your child using AI tools to write essays	18%	17%	29%	13%	15%		7%	36%	28%

THE CHALLENGES THAT LIE AHEAD

Need for Professional Development and High-Quality AI Tools for Educators: Teachers need professional development on how to use Artificial Intelligence and how to teach their students to be responsible AI consumers.[6] Equipping teachers with tools to support their pedagogy, especially ones that will make their lives more efficient, holds tremendous potential. With the right AI prompting, a lesson plan that might have taken an hour to develop can be done in 10 minutes. As AI pedagogical strategies emerge, teaching frameworks like, TeachAI[7], aim to guide the integration of AI in education, aligning AI applications with educational goals and promoting equitable access to technology.

EXAMPLE:

In light of Valentine's Day, we asked Chat GPT to write a 6th-grade lesson plan teaching a student how to write a poem that evokes feelings of the heart. This is what CHAT GPT wrote in a matter of seconds:

Lesson Plan: Crafting Poems that Move Hearts

Objective: Students will learn the elements of emotive poetry and practice writing poems that evoke emotions in the reader.

Grade Level: Middle School (6th to 8th grade)

Materials: Whiteboard and markers, Chart paper and markers, Examples of emotive poems, Writing journals or paper, Pens or pencils, Highlighters, Projector for multimedia resources

Introduction:

1. Begin with a discussion on what makes a poem powerful and memorable. Ask students to share their favorite poems and what emotions those poems evoke.

2. Explain the objective of the lesson: to explore the elements of emotive poetry and practice writing poems that move hearts.

Activity 1: Analyzing Emotive Poems (30 minutes)

1. Present examples of emotive poems, discussing how poets use language, imagery, and figurative language to convey emotions.

2. Break down one or two poems on the whiteboard, highlighting key elements that contribute to emotional impact.

3. Ask students to identify words, phrases, or literary devices that they find particularly moving in the examples.

Activity 2: Brainstorming Emotions (20 minutes)

1. Have a class brainstorming session about various emotions. Write these emotions on the whiteboard.

2. Discuss how different experiences and situations can evoke specific emotions in people.

3. Encourage students to share personal experiences or stories related to these emotions.

Activity 3: Writing Emotive Poems (50 minutes)

1. Provide writing prompts related to specific emotions (love, joy, sadness, etc.).

2. Instruct students to write a poem focusing on conveying a chosen emotion. Emphasize the use of descriptive language, sensory details, and vivid imagery.

3. Encourage creativity and experimentation with different poetic forms (free verse, haiku, sonnet, etc.).

4. Allow time for students to share their initial drafts with a peer and provide constructive feedback.

Activity 4: Revise and Refine (30 minutes)

1. Discuss the importance of revising and refining poetry. Emphasize the power of careful word choice and editing.

2. Instruct students to revise their poems, paying attention to language, rhythm, and emotional impact.

3. Provide peer review opportunities for students to share revised poems and offer feedback.

Closure: 1. Have a poetry reading session where students can share their final poems with the class.

2. Discuss the diversity of emotions explored in the poems and how each poem succeeded in moving hearts.

3. Reflect on the process of crafting emotive poems and the impact of words on readers.

Homework/Extension: Assign students to write a reflection on the experience of crafting an emotive poem. Additionally, encourage them to explore and read poems by famous poets known for their emotional resonance.

Assessment: Evaluate students based on their participation in class discussions, the quality of their initial drafts, the effectiveness of revisions, and their ability to convey emotions through their final poems. Provide constructive feedback on both content and style.

THE CHALLENGES THAT LIE AHEAD (CONTINUED)

AI Literacy, Competencies, and Standards: With the increasing prevalence of AI in education, there is a growing need to integrate AI literacy goals and specific learning outcomes into school curricula. This involves teaching students how to use AI tools and understand the basics of AI technology.

Teaching students to be AI literate means teaching them how to discern false information, like California's new Media Literacy Law does[8], and how to be responsible consumers of media. Providing students access to trained teachers who can show them how to use AI well, will have a greater chance of utilizing it in a future career or learning opportunity.

Implicit Bias: Ensuring that we actively monitor for and disrupt bias in AI will be critical. AI is learned by design, and if it were to develop a bias pattern, it would be applied at scale. For example, in Broward County, Florida, an algorithm mislabeled African Americans as "high risk" at almost twice the rate it mislabeled white defendants.[9] Other research conducted by Google found that language processing models on news articles led to them exhibiting gender stereotypes.[10]

Barriers to Equitable Access: We must create open-source content and tools in order to reduce barriers to AI utilization.

Data Privacy: As data breaches at high-profile companies continue to be reported, public concern over data privacy has escalated. While lawmakers across the world have passed sweeping regulations to combat these breaches and safeguard consumer data, many of these protections were enacted in a pre-AI world and, with the rapid growth of AI technologies, are inadequate.

At the heart of AI technology is the collection and analysis of data, including personal data. In the simplest of terms, AI teaches itself how to make independent decisions and adjust to changes without human input. As the use of AI technologies increases, so does apprehension about data storage, usage, and access. Where data is stored, who has access and under what circumstances, and where the data is coming from are concerns that traditional data protection laws are ill-equipped to answer.[11]

Misinformation: Distinguishing fact from fiction online is difficult, but the rise in popularity of AI technologies has made the task even more challenging. AI tools are designed to answer prompts by generating text, images, audio or other forms of media. While AI can help inspire creativity, when AI is used to generate content meant to deliberately trick people, the results could have long-lasting consequences.

Misinformation could affect votes or the stock market and, according to AI expert Wasim Khaled, "Generative AI could also erode trust and our shared sense of reality."[12] It is not just bad actors using AI to create false news stories and videos. And yet misinformation is not always intentional. There are also instances where AI will generate false information on its own. This is called a hallucination and it occurs when AI fabricates sources, referencing books that don't exist or news articles pretending to be from well-known websites.[13]

POLICY CONSIDERATIONS

Biden Blueprint for Responsible AI: The Biden Administration has released a blueprint[14] for regulating AI with a focus on protecting democratic values and civil rights. It emphasizes the potential harm caused by the misuse of technology, data, and automated systems, citing instances of bias, discrimination, and threats to privacy. To address these challenges, the blueprint proposes five guiding principles:

1. **Safe and Effective Systems:** Ensuring that automated systems are reliable, secure, and do not pose risks to individuals or society.

2. **Algorithmic Discrimination Protections:** Guarding against biases and discrimination in algorithms used for hiring, decisions about school enrollment, and recommendation into a special education or gifted and talented program.

3. **Data Privacy:** Protecting individuals from unwarranted data collection and ensuring their privacy rights are respected.

4. **Notice and Explanation:** Providing transparency by notifying individuals about the use of automated systems and explaining how decisions affecting them are made.

5. **Human Alternatives, Consideration, and Fallback:** Incorporating human-centric approaches, considering alternatives, and establishing fallback mechanisms in case of system failures or unintended consequences.

The blueprint aligns with President Biden's commitment to upholding civil rights and democratic values, urging the incorporation of these principles into policies and practices related to AI. It emphasizes the need for a society that utilizes technology to benefit everyone without compromising fundamental rights. The accompanying handbook, "From Principles to Practice,"[15] provides practical steps for implementing these principles in designing and deploying AI technologies.

EMERGING POLICY TRENDS

Media and AI Literacy State Standards: Policymakers are increasingly focused on integrating media and AI literacy into state education standards. This emphasizes the importance of equipping students with critical thinking skills to navigate and understand information in the digital age, including the implications of AI technologies. The trend suggests a recognition of the need for a comprehensive educational approach that addresses the challenges posed by AI in media and information consumption.

State-Resourced Professional Development: Emerging policies highlight the necessity of providing educators with professional development opportunities related to AI. Acknowledging the evolving nature of technology, there is an emphasis on training teachers to effectively integrate AI concepts into their teaching methods. This trend aims to ensure that educators are well-equipped to guide students in understanding and engaging with AI responsibly.

Tool Development and Research: Policymakers are directing attention toward the development of educational tools and research initiatives focused on AI. This involves fostering the creation of resources that facilitate AI education in classrooms. Additionally, there is an emphasis on supporting research efforts that contribute to a deeper understanding of the impact of AI on education. This trend reflects a commitment to staying abreast of technological advancements and leveraging them for educational improvement.

EMERGING POLICY TRENDS (CONTINUED)

Accountability for Foundational Skills: As artificial intelligence (AI) continues to integrate into educational settings, it is imperative to emphasize transparency and accountability in tracking and assessing students' progress in foundational skills such as reading, writing, and math. AI tools have the potential to provide personalized learning experiences, tailored to individual needs, fostering a more efficient and inclusive educational environment.

However, while AI is meant to enhance the learning experience of its users, it is critical that the next generation not establish an over-reliance on AI as a replacement for learning foundational skills like reading comprehension, crafting an argument, or completing a math program.

Luckily, AI allows us the ability to monitor student progress with greater frequency with the ability to personalize interventions. AI should be a tool makes it easier for students who are behind to reach grade level.

Establishing a Digital Consumer Protection Commission: Senator Elizabeth Warren and Senator Lindsey Graham have introduced the Digital Consumer Protection Commission Act that would regulate tech companies and ensure that consumers are protected from disinformation, discrimination, and privacy breaches.[16] The National Parents Union supports the creation of this Consumer Protection Commission as a system of accountability and transparency as AI unfolds in our society.

CONCLUSION

Artificial Intelligence holds immense promise in K-12 education, offering benefits such as personalized learning and teacher support. However, it also presents challenges and ethical considerations that must be carefully addressed to ensure equitable and responsible implementation.

The future of education is undoubtedly intertwined with AI, and it is imperative that educators, policymakers, and society as a whole work collaboratively to harness its potential while safeguarding the interests of students and school communities and the integrity of education itself.

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