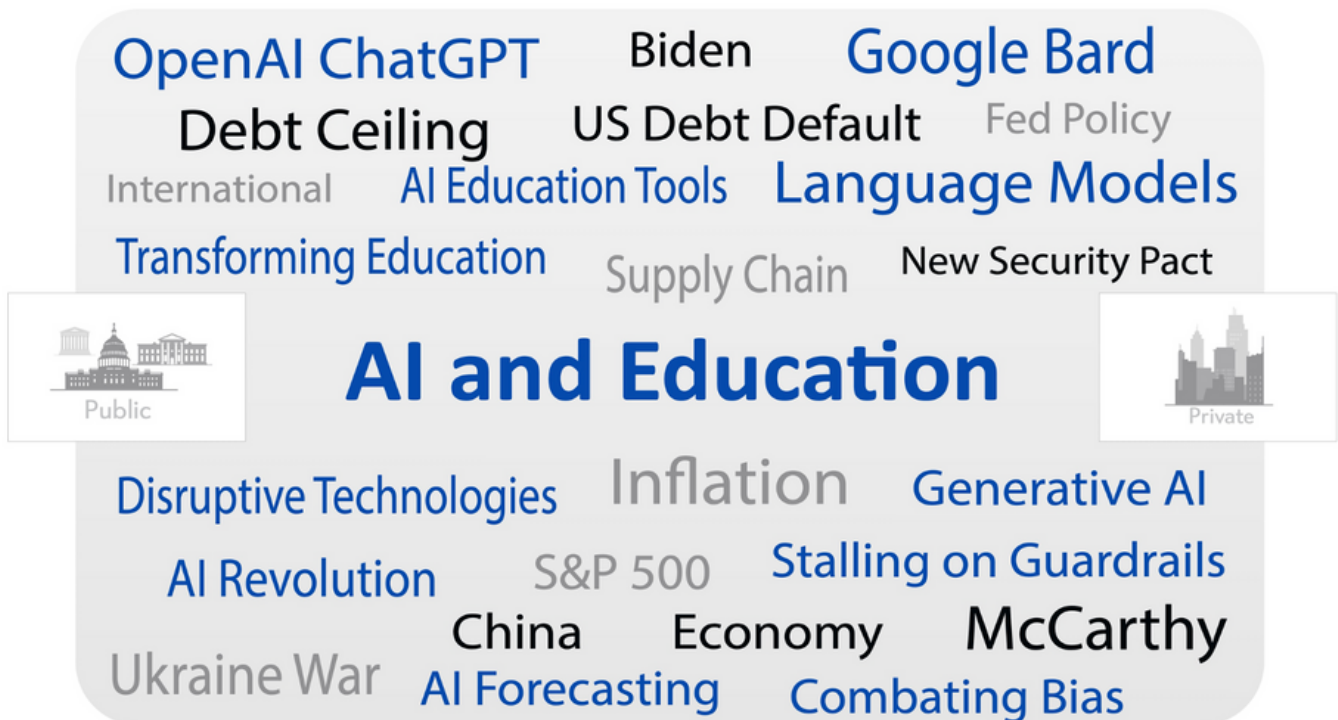# AI AND EDUCATION



Bottom Line Up Front:

- AI is having a profound impact on how people learn, be it in classrooms, corporate settings, and/or even within government - the challenge will be adapting methodologies which leverage an unstoppable technology without undermining learning fundamentals.

- There is a case to be made that AI will result in 'learning loss' (a decline in essential literacy and numeracy), just as there is a case to be made that it fosters a more exploratory and dynamic approach to learning which has been a long-standing limitation of traditional education systems.

- The convergence of AI's implications on government and education can be seen in the White House's recent set of initiatives surrounding the use and development of AI, under a program called the 'National AI R&D Strategic Plan', and specifically its report on "AI and the Future of Teaching and Learning".

- Lesser-known (or at least less frequently discussed) implications of AI's impact on education include its ability to create adaptive assessments that automatically adjust to a student's level of understanding. On the other hand, the costs associated with AI's access/use have the potential to widen the digital divide and limit access to a growing number of institutions.

Blue terms are connected to the word of the week via news outlets and searches, whereas black and gray terms are not directly related, but still dominate the social space.

AI and Education defined: AI at this point needs little introduction or definition, however it's important to note that for purposes of this week our focus is 'AI' in the sense of generative chat and search. Our focus on 'education' this week includes the sense of traditional school systems while expanding into areas like public policy, national security, and even economics. While education represents a long-standing set of institutions, ideologies, and approaches, its convergence with a rapidly evolving technology presents a unique set of challenges which will need to be addressed in an unprecedented way.

Why this topic is important right now: AI is both a term and technology which as been thrown around a lot over the past several years, but until recently, never has it been so widely available and used by so many people. Proportionate to 'who' was leveraging AI prior to Open AI's ChatGPT arriving on the scene, the number of institutions/organizations/individuals using it now has exploded. And though there are no shortage of 'interesting' things one can do with AI and generative search, its implications on industries like education could not be more profound (in both the near-term as well as long-term). As these implications reveal themselves it will be increasingly important to understand that they will not be solely positive or negative, but rather largely dependent on how the technology is leveraged in given circumstances combined with a foundational understanding of 'truth' in the topic at hand. This weighing of the pros-and-cons has become a topic of increased debate across schools, institutions, and even governments as they come to terms with not being able to "put the genie back in the bottle", while simultaneously embracing AI's virtues and shepherding good stewardship.

*AI Generated Image*

*"Generative chat is a double-edged sword, akin to a powerful tool that can illuminate the path of knowledge with its insights, but must be wielded with caution to avoid the shadows of misinformation and bias."*
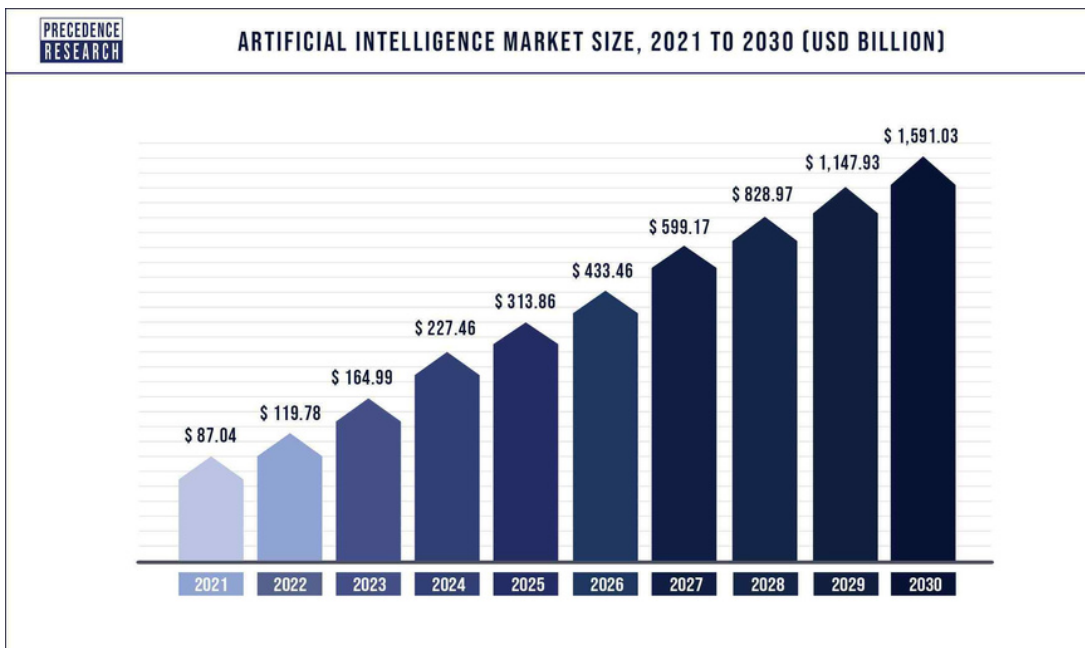
*-ChatGPT, 2023*

Generative chat has the potential to significantly expand learning opportunities in education. It enables individuals to leverage its capabilities in real-time, facilitating research, information gathering, and problem-solving. To maximize its benefits, users must actively engage with generative chat, combining its responses with their own critical thinking to produce well-informed work. In this context, supervisors play a pivotal role in guiding individuals to effectively utilize this tool. They emphasize the importance of digital literacy skills and foster a mindset of critical evaluation, providing guidance on verifying information from diverse sources, addressing biases, and promoting responsible and ethical usage.

Within the classroom, generative chat serves as a powerful tool that enhances learning experiences. Students are able to tap into its vast resources, gaining access to a wealth of information quickly and efficiently. Generative chat empowers students to think critically, analyze different perspectives, and develop a deeper understanding of complex subjects. By integrating generative chat insights into their own thought processes, students foster independent thinking, creativity, and collaboration. Educators assist students in navigating potential pitfalls, helping them develop the necessary skills to validate information, cross-reference sources, and assess the credibility of generative chat responses.

Beyond the classroom, generative chat offers valuable opportunities for professionals to advance their careers. Professionals leverage generative chat for research, continuous learning, and problem-solving. It serves as a conduit for quick access to industry insights, enabling professionals to stay up-to-date with the latest trends and advancements in their fields. Generative chat also streamlines routine tasks, freeing up time for more strategic and high-level work. However, professionals must exercise caution and engage in critical thinking while utilizing generative chat. They must verify information from reliable sources and be mindful of the limitations inherent in AI-driven tools. By harnessing generative chat effectively, professionals can enhance their expertise, adapt to evolving demands, and make informed decisions that contribute to their professional growth and success.

**ARTIFICIAL INTELLIGENCE MARKET SIZE, 2021 TO 2030 (USD BILLION)**



*Source: Precedence Research*

Integrating AI into education has generated varied reactions and degrees of acceptance among educators and the general public. Here are some key points regarding public sentiment towards AI usage in education:

Potential Benefits: Many recognize the various advantages AI holds for education. AI-powered tools and systems provide personalized learning experiences, adapt to individual student needs, provide instantaneous feedback, and facilitate data-driven insights for teachers. These advancements represent opportunities to enhance educational outcomes while enriching overall learning experiences.

Concerns About Equity and Accessibility: One primary worry regarding AI-powered education tools is their potential to further inequities in education. AI systems rely heavily on data for training algorithms; any bias or incompleteness found within such data sets could contribute to increasing inequities. Secondly, concerns exist around accessing AI-powered tools and resources unequal access create disparate educational opportunities that might otherwise not exist.

Relationship Concerns: Some individuals express reservations about how AI might impact teacher-student relations. Although AI can automate certain tasks and provide support, critics worry that its use might depersonalize education and diminish teachers' roles; they argue that its human aspect should not be replaced with technology.

Data Privacy and Security: The collection and analysis of vast amounts of student data raises serious concerns over privacy and security. People worry about misuse or mishandling of sensitive data relating to children. Establishing robust data protection measures as part of transparent practices are seen as essential for AI adoption in education settings.

Ethical Considerations: AI in education raises ethical considerations that include algorithmic bias, transparency in decision-making processes and responsible use of student data. Ensuring AI systems are developed and deployed ethically with proper safeguards is considered paramount.

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2. Neeva. (2023). [NeevaAI response to prompts about AI in education].

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**SENTIMENT:**

1. Multiple social platforms and proprietary listening tools.

NEPTUNE