AFFIRMATION

Resolved: In the United States, the benefits of the use of generative artificial intelligence in education outweigh the harms.

C1: AI in the workforce

Learning generative AI early is crucial for readiness in the workforce

zinfi. "AI in Education: Preparing Students for Workforce Readiness." ZINFI Technologies, Inc., 5 Feb. 2**25**, www.zinfi.com/blog/ai-in-education-workforce-readiness/.

Why **AI** in Education **is Crucial for Workforce Readiness**

Artificial Intelligence (AI) has become a transformative force across industries, redefining how work is performed and reshaping workforce demands. **With AI advancing rapidly, the education system is vital in readying individuals for an AI-driven future.** Integrating AI in education extends beyond teaching technical skills; it prepares learners with adaptability, problem-solving abilities, and skills to collaborate with AI technologies.

This article delves into the significance of AI in education for workforce readiness. It shows how schools and colleges can use AI to build skills, close gaps, and prepare students for diverse careers.**Transforming Education Through Artificial Intelligence Personalizing Learning Experiences** **AI-powered educational tools are revolutionizing learning** b, providing personalized experiences tailored to individual needs. Platforms like Khan Academy and DreamBox use AI to tailor lessons based on students' strengths and weaknesses. This personalized approach **ensures students grasp foundational concepts,** enabling them to **tackle more complex topics confidently**. Moreover, it fosters independent learning, an essential skill in a workforce increasingly driven by self-paced technology adoption. Personalized AI in education promotes a learner-centric environment that empowers individuals to progress at their own pace**.** This level of customization not only improves academic outcomes but also builds confidence and motivation in learners**, equipping them with the skills needed for future careers.****Fostering Accessibility and Inclusivity**

AI can bridge the gap for students with disabilities or those from underserved communities. Speech recognition, real-time translation, and text-to-speech tools enable learners to access content in various ways. For example, **students with visual impairments can use AI screen readers to access online resources.** At the same time, real-time transcription helps students with hearing impairments in the classroom. AI in education helps create a fair environment, allowing more s=the skills they need for jobs. By fostering inclusivity, it ensures that no learner is left behind, opening doors to opportunities for everyone, regardless of their background or circumstances. AI tools also facilitate equitable learning by providing diverse language support, enabling students from non-English-speaking backgrounds to access high-quality education. This inclusivity is critical in leveling the playing field and ensuring diverse participation in future workforce opportunities. **Building Workforce-Ready Skills** Introducing AI Early in K-12 Education Early exposure to AI concepts prepares students for careers in technology-driven industries. **Programs like MIT's AI4ALL and the National Science Foundation's AI Institutes work with K-12 schools to introduce students to machine learning, robotics, and data science.** This early exposure not only sparks interest in STEM fields but also builds critical thinking and problem-solving abilities. Students develop analytical thinking and adaptability to evolving technologies, essential skills in an AI-driven economy. The inclusion of AI in education from a young age lays the foundation for a future-ready workforce equipped to meet emerging challenges. By incorporating hands-on projects and real-world problem-solving tasks, K-12 programs can inspire innovation and creativity among students, fostering a passion for lifelong learning. **Promoting Interdisciplinary Learning in Higher Education** In higher education, AI integration extends beyond computer science programs. Universities are using interdisciplinary models like "AI + X." In this model, AI is combined with fields like healthcare, finance, or environmental science.For example, medical students learn to use AI-powered diagnostic tools, while business students leverage AI for market analysis. This approach equips graduates with technical skills to apply AI in real-world challenges within their fields. By blending AI in education with domain-specific knowledge, institutions produce graduates who can innovate across industries. Additionally, interdisciplinary programs encourage students to think critically about how AI can address societal challenges, such as climate change and public health crises. **Closing the Skills Gap with AI** Addressing the Mismatch Between Education and Workforce NeedsA key challenge in workforce readiness is the skills gap, where workers lack the qualifications needed for changing industries. AI in education can address this by aligning curricula with the needs of the modern job market. **Initiatives like IBM's Open P-TECH provide AI training aligned with industry standards, preparing students with in-demand skills. These initiatives emphasize practical applications of AI, ensuring graduates are job-ready upon entering the workforce.** The integration of AI in education helps bridge the gap between academic learning and professional requirements. By partnering with industry leaders, educational institutions can design courses that reflect the skills and technologies most in demand, ensuring students remain competitive in the evolving job market. **Upskilling and Reskilling for Lifelong Learning** The rise of AI demands that workers continually update their skills to remain relevant. Educational institutions and online platforms play a pivotal role in facilitating lifelong learning through AI-driven courses and certifications.Coursera and LinkedIn Learning leverage AI to suggest personalized learning paths aligned with an individual's career goals. This approach empowers professionals to reskill efficiently, making them more adaptable to technological advancements. AI in education enables continuous growth, fostering a resilient and capable workforce. Employers are increasingly encouraging their teams to participate in these programs, recognizing the value of a workforce skilled in emerging AI technologies. Lifelong learning supported by AI ensures that individuals remain agile and ready to meet the demands of a rapidly changing workplace.**Using AI in education to upskill learning.** Preparing for Ethical and Responsible AI Use Educating About AI Ethics and BiasAs AI becomes ubiquitous**,** understanding its ethical implications is crucial. Education must emphasize the responsible use of AI, focusing on issues such as algorithmic bias, data privacy, and transparency.

Generative AI will be present in every part of student's lives, especially once they enter the workforce.

CIO **Dive,** May 30, 2**24,** https://www.ciodive.com/news/enterprise-generative-ai-use- workplace-altman-solon-report/717552/. Accessed February 10, 2025.

Generative AI use soared in the enterprise since last year, according to a study from consulting firm Altman Solon published this month. Nearly **two-thirds of businesses** say they've **adopted** the technology, compared to just 11% in the first quarter of 2023. Software development remains a key focus of adoption as more than three-quarters of developers use generative **AI** tools in the workplace, the survey of 400 senior-level executives found. **Over half of enterprises are using gen AI** more than one generative **AI** tool, while 1 in 10 businesses said teams deployed four or more. Text-based tools were most prominent, followed by images and audio.

Yuan Lily. **"How to Include AI Skills on Your Resume: Tips and Examples."** *ResumeGiants*, 29 Jan. 2**24,** www.resumegiants.com/blog/ai-skills-resume/. Accessed 4 Mar. 2025.

In today's job market, putting AI skills on your resume isn't just practically **a smart move; it's a must.** Companies all around are using AI tech more and more, so showing you've got a handle on it can make you stand out. Employers know how much AI can help make things run smoother and spark new ideas. **As industries continue to evolve, individuals with artificial intelligence skills are better positioned** to lead, innovate, and drive positive change **making these skills a valuable asset for career growth and long-term success** in the dynamic landscape of the 21st century.

The shift in priorities highlights the growing importance of AI education for future employment prospects.

Ascione, Laura. "5 Ways AI Will Impact the Workforce--and How Higher Ed Can Respond." ECampus News, 7 Mar. 20**24**, www.ecampusnews.com/ai-in-education/2024/03/07/ai-impact-workforce-higher-ed/. Accessed 3 Mar. 2025.

1. **Most organizations will use AI by 2028.** AI is expected to significantly alter how business is done in the foreseeable future. More than 90 percent of surveyed employers expect to use AI-related solutions in their organizations by 2028. In fact, almost all believe AI will positively impact their organization to some degree. In addition, th**benefits of AI will be spread across the organization**. While most employers (92 percent) believe their IT departments will be the biggest beneficiary of AI, they also believe most other departments, from sales and marketing (85 percent) to human resources (78 percent), will derive significant value from it as well.

2. Generative AI will transform how we work. Over 90 percent of both employers and employees expect to benefit from generative AI, which refers to an advanced form of AI that can create new content and ideas. Unlike traditional AI systems that are designed to recognize patterns and make predictions, generative AI creates new content in the form of conversations, stories, images, videos, music, and more. Recent breakthroughs in generative AI technology already promise to drastically change how workers, creators, and students approach content development. **AI will be used across levels of technical knowledge,** with **61 percent of 'tech-specialists'** expecting to use it significantly, followed by 49 percent of 'tech adjacent' workers, and 21 percent of 'non-tech' workers.

3. **Acquiring AI skills will boost pay and create other career benefits for employees.** Eighty-four percent of employees indicate that AI could have some positive impact on their careers, mirroring the views of employers. The benefits of acquiring AI skills could be substantial for workers. Employers estimate that workers who acquire AI expertise could see their paychecks jump by 35 percent or more, depending on their departments with IT (47 percent) and sales and marketing (48 percent) seeing the highest bumps. Survey data also indicates that interest in acquiring AI skills transcends generations to advance their careers. Roughly two-thirds of workers over the age of 55 express an interest in doing so.

4. The productivity payoff from an AI-skilled workforce could be immense. Surveyed employers believe that AI could boost productivity by 47 percent, with large-sized organizations expecting the highest boost (49 percent). Employees, too, expect AI to boost their productivity, indicating that it will help them complete tasks 41 percent more efficiently. Interestingly, 88 percent of workers expect to use AI in their daily work by 2028, and of those, one in four (25 percent) expect to be using it "extensively" or in over 60 percent of their job tasks.

5. The AI skills gap can be reduced through more awareness of training programs. **Employers rank AI as the most important technology skillset a job candidate can possess,** outranking others such as digital marketing, application development, and use of cloud-based tools. **Forty-two percent of surveyed employers are actively looking for people with AI development qualifications today, and this will rise to 51 percent in the next five years. However, the rapid transition to an AI-enabled workforce has created a labor market shortage for AI talent.** Nearly three out of four (75 percent) of employers who consider hiring talent with AI skills as a priority for them today report having difficulty finding qualified candidates. The study also found a training awareness gap. Close to 82 percent of employers said that they don't know how to implement an AI training program. Similarly, nearly 80 percent of employees say that they aren't sure what AI training programs are available to them.

Impact: Not only is AI a vital part of our future but it is bringing up our economy

JP **Morgan.** Infrastructure Is Destiny Economic Returns on US Investment in Democratic AI. Sept. 20**24**.

Revolutionary technology propels advances in infrastructure. Capital flows determine where and how the infrastructure is built. Those decisions determine whether a society leads or lags on technological innovation, often with far-reaching consequences. This is why infrastructure is destiny. The United States leads the world today in development of artificial intelligence because of decisions made decades ago to install fiber-optic cables, coaxial lines and other broadband infrastructure that put the country at the forefront of the early digital revolution. The 1996 Telecommunications Act, with bipartisan support from forward-thinking lawmakers, reinforced the infrastructure as a national strategy. As revolutionary as electricity, and promising similarly distributed access and benefits, **AI can power a reindustrialization across the US,** extend its global competitiveness, and boost national, state and household finances for the long term. Investment **to extend the US lead in AI can yield tens of thousands of jobs; significant growth in GDP;** a modernized, cleaner energy grid and energy policy, featuring nuclear power; and a state-of-the art network of semiconductor manufacturing facilities – invigorating local economies across the country. These are New Deal-sized stakes and scale. Capital spending on AI already rivals the mainframe era of the late 1960s and the fiber optic deployment of the late 1990s1 – with an estimated $175 billion in global infrastructure funds waiting to be committed.2 The question is not whether that funding will flow, but where. If it doesn't flow into US-backed global infrastructure projects that advance a global AI that spreads the technology's benefits to the most people possible, then it will flow to China-backed projects that leverage AI to cement and expand autocratic power. There is no third option. Analysts expect the build to require unprecedented scaling of computer. **2023 saw massive growth in demand for AI data centers – around 167% year-over-year – that shows no sign of slowing**.

C2: Vaccines/Med industry

AI is currently being taught and used in the medical field as well with major results

Basu, Kanadpriya, et al. "Artificial Intelligence: How Is It Changing Medical Sciences and Its Future?" *Indian Journal of Dermatology*, vol. 65, no. 5, Sept. 20**20,** pp. 365–370, https://doi.org/10.4103/ijd.IJD_421_20.

Most **global pharmaceutical companies** have **invested** their time and money on using **AI for drug development of major diseases,** such as cancer or cardiovascular disease. **Given the impact that AI and machine learning is having on our wider world, it is important for AI to be a part of the curriculum for** a range of domain **experts. This is particularly true for the medical profession,** where the cost of a wrong decision can be fatal.

This same AI used to help major diseases can prevent pandemics

"Using AI from Lab to Jab: How Did Artificial Intelligence Help Us Develop and Deliver COVID-19 Vaccines?" ***Gavi***.org, 20**25,** www.gavi.org/vaccinesnetwork/using-ai-lab-jab-how-did-artificial-intelligence-help-us-develop-and-deliver-covid.

When COVID-19 first swept across the globe, **researchers rushed to develop a vaccine that could save lives and end the pandemic as quickly as possible. Enter** artificial intelligence **(AI), which accelerated the process in a way that has never been done before in vaccine development.**

Not only did AI help slow the spread of COVID it could prevent the outbreak of new strains

Higgins, Matthew K. "Can We AlphaFold Our Way out of the next Pandemic?" *Journal of Molecular Biology*, June 20**21,** p. 167093, https://doi.org/10.1016/j.jmb.2021.167093.

With an infectious organism dominating the world stage, **the developers of Alphafold 2 were keen to play their part, accurately predicting** novel **structures of two proteins from SARS-CoV-2.**they highlighted this contribution writing **"we've also seen signs that protein structure prediction** could be **useful in future pandemic response efforts"**.● Knowledge of the structure of the SARS-CoV coronavirus spike protein allowed design of mutants which stabilise the spike in the pre-fusion conformation.[1] As this is the form of the spike found on virus particles, vaccine immunogens which elicit antibodies that target this conformation are likely to be most effective.[2] **As the SARS-CoV-2 virus, which causes COVID-19, is closely related to SARS-CoV2, 3, 4 this insight was transferable to the new pandemic strain.**[2] As a result, the Pfizer/BioNTech and Moderna vaccines, amongst others, include spike-stabilising mutations in their effective designs.[3]This is just one example of a broader field of 'reverse vaccinology', in which rational insight into the structures of pathogen surface proteins, and their complexes with neutralising monoclonal antibodies, guide design of improved vaccine immunogens. **The current strengths of AlphaFold 2 appear to be in the prediction of structures of single proteins,** both in cases where there is a similar structure to act as a template, and where there is not. **As seen in the case of PfRH5, structures of single antigens can be used to guide design of improved vaccine immunogens**

U. N. ations. "14.9 Million Excess Deaths Associated with the COVID-19 Pandemic in 2020 and 2021." *United Nations*, www.un.org/en/desa/149-million-excess-deaths-associated-covid-19-pandemic-2020-and-20 21

New estimates from the World Health Organization (WHO) show that the full death toll associated directly or indirectly with the COVID-19 pandemic (described as "excess mortality") between 1 January 2020 and 31 December 2021 was approximately 14.9 million (range 13.3 million to 16.6 million). "These sobering data not only point t the impact of the pandemic but also to the need for all countries to invest in more resilient health systems that can sustain essential health services during crises, including stronger health information systems," said Dr Tedros Adhanom Ghebreyesus, WHO Director-General.

We need these vaccinations not only in the event of another outbreak but to prevent death overall

Carter Austin, et al. "Modeling the Impact of Vaccination for the Immunization Agenda 2030: Deaths Averted due to Vaccination against 14 Pathogens in 194 Countries from 2021-2030." *Papers.ssrn.com*, 20 Apr. 20**21,** papers.ssrn.com/sol3/papers.cfm?abstract_id=3830781 .

Overall, an estimated 51.0 million (95% CI: 48.5 – 53.7) **deaths are expected to be averted due to vaccinations administered between the years 2021 and 2030. With immunization coverage projected to increase over 2021-2030 an average of 5.1 million per year** (4.9 – 5.4) **deaths will be averted annually**, with 4.4 million(3.6- 5.1) deaths be averted for the year 2021, **gradually rising to 5.8 million**(4.9-6.6) **deaths averted in 2030.**

Impact: AI used in medical fields are used to make vaccinations. These vaccinations helped stop the spread of covid, and potentially the next one. This shows how our youth needs to learn AI in schools.

Overall we can see that AI helps us build crucial infrastructure and prevent millions of deaths annually therefore it is clear that the benefits of AI outweigh the harms and I trust you will vote in the affirmation