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The Intersection of Policy and Generative AI in Transforming K-12 Education

Despite its early stage of development, the emergence of generative artificial intelligence (AI) is catalyzing a significant shift in the workforce paradigm. According to a 2023 Goldman Sachs report, more than two-thirds of U.S. jobs will be influenced by artificial intelligence.[1] However, this doesn't necessarily entail a wholesale substitution of human roles, as some may fear. Instead, many positions will witness the automation of certain administrative or technical tasks, leaving room for employees to focus on more nuanced aspects of their jobs. Already, companies are leveraging tools such as ChatGPT, Scribe, and DALLE-2 to automate tasks like scheduling meetings, generating content, and summarizing reports—tasks that are repetitive and structured in nature.[2] While generative AI is poised to take over these administrative functions, it cannot replicate uniquely human abilities such as creativity, adaptability, and collaboration. This highlights the importance of equipping our young people with both soft or "durable skills," alongside teaching them how to effectively utilize generative AI.

46% Out of 1,000 graduates who finished either a degree or non-degree program, about 46 percent feel threatened by AI.[3]

52% Among those 1,000 graduates, 52% feel they aren't ready for a workforce that involves AI.[4]

22% About 22 percent of workers in the United States are worried that technology will make their jobs irrelevant.[5]

Research indicates that both existing employees and the prospective workforce, including students and recent graduates, harbor concerns regarding the impact of AI on the labor market and their readiness for it.

1 Goldman Sachs. (2023). Generative AI could raise global GDP by 7%. https://www.goldmansachs.com/intelligence/pages/generative-ai-could-raise-global-gdp-by-7-percent.html. (accessed on 02/08/24)
2 Alavi, M. & Westerman, G. (2023). How Generative AI Will Transform Knowledge Work. Harvard Business Review. https://hbr.org/2023/11/how-generative-ai-will-transform-knowledge-work
3 Cengage Group. (2023). Cengage Group 2023 Graduate Employability Report: AI Joins the Workforce. https://cengage.widen.net/s/nvd6ghd8vl/final-cg-employability-survey-report-july2023. (accessed on 02/09/24)
4 Ibid.
5 Saad, Lydia. (2023). More U.S. Workers Fear Technology Making Their Jobs Obsolete. Gallup. https://news.gallup.com/poll/510551/workers-fear-technology-making-jobs-obsolete

About NFTE

The Network for Teaching Entrepreneurship (NFTE) is a global education nonprofit that empowers partners to integrate entrepreneurial education across curricula and equips youth in under-resourced communities with the skills, connections, credentials, and real-world experiences needed to lead change and own their futures. Since 1987, NFTE has reached more than a million learners worldwide.

The absence of policies and guidelines regarding AI in education may exacerbate this unease, especially as the rapid advancement of generative AI outpaces efforts by education, workforce, and policy systems to establish clear directives. The Network for Teaching Entrepreneurship (NFTE) believes that prioritizing a student-centered approach that integrates youth entrepreneurship with AI within K-12 education is essential for equipping students with the agency, resilience, and adaptability needed to navigate their future paths. Such initiatives can be reinforced by national, state, and local policies that endorse technological advancements, including AI, and cultivate entrepreneurial skills.

Generative AI in Youth Entrepreneurship

Given that generative AI is still a nascent technology, educational institutions are faced with the challenge of determining the essential policies needed to foster innovation while ensuring the safety of students. According to a 2023 UNESCO global survey involving over 450 schools and universities, fewer than 10% have developed institutional policies or formal guidance concerning the utilization of AI.[6] Consequently, educators and school districts have started to adopt a more improvised approach to integrating AI into the classroom, with students often using AI before their own teachers.

At NFTE, a notable trend has emerged in the innovative approaches adopted by participating students over the past year, which aligns with these findings. Students within our programs are demonstrating a keen interest in learning how to utilize AI and are not just using it to improve their own work progress, but are incorporating AI into the fabric of their businesses. For instance, in 2023, Marli Schalkham (15) from New Smyrna Beach, FL, showcased her business proposal, Clear Minds Together, which uses AI to help connect individuals with similar mental health profiles for mutual support. Saket Pathak (17) from San Jose, CA, presented his proposed business, InclusivityIQ, an AI-based platform offering data-driven diversity, equity, and inclusion solutions to businesses striving for more inclusive workplaces. NFTE students are integrating AI into their business pitches in creative ways at NFTE's regional and national competitions, often for the social good of others.

One NFTE Alum's approach to integrating AI into NFTE's programs

Generative AI stands on the cusp of transforming personalized and adaptive learning for young individuals on a large scale. Capturing this potential, Cody Chang, a NFTE alumnus, embraced the vision of leveraging generative AI to empower young people embarking on their own entrepreneurial journeys. Thus, Tier One AI Labs emerged, introducing an innovative platform tailored specifically for education technology and education program providers. By integrating generative AI into existing curriculum, Tier One AI Labs enhances content creation, grading processes, and facilitates seamless interaction between students, teachers, and mentors.

Collaborating closely with NFTE, Tier One AI Labs initiated a pilot program, training a specialized AI model aligned with NFTE's objectives. This endeavor not only ensures adherence to curriculum standards but also provides administrators with invaluable insights into curriculum adoption, liberating educators from time-consuming grading tasks while equipping students with a dynamic AI companion for optimized learning experiences. Through predictive analytics and automated task management, faculty, staff, and educational administrators are empowered to focus their efforts on enhancing and accelerating student learning.

Based on what we've observed from our participants, entrepreneurship education instills in young learners both the enthusiasm and the skills necessary to explore and experiment with AI. Entrepreneurship education offers invaluable real-world learning experiences that effectively prepare young people for the challenges and demands of the workforce. Generative AI can complement this by offering opportunities for students to learn technical

6 UNESCO. (2023). UNESCO survey: Less than 10% of schools and universities have formal guidance on AI. https://www.unesco.org/en/articles/unesco-survey-less-10-schools-and-universities-have-formal-guidance-ai (accessed on 02/09/24)

skills in areas like programming, data analysis, and AI development. Students engaged in the development of business plans can harness AI to bolster their efforts by facilitating brainstorming sessions, streamlining tasks, and enhancing overall project efficiency. Through use of generative AI, students can also grapple with its limitations, understanding that while it can offer support, it may not always deliver complete accuracy or detail, nor can it entirely replace human capabilities. By embarking on the creation of their unique ventures, students gain not only the tools but also the creative autonomy to explore technologies such as AI, thus influencing not only their future career paths but also the evolution of the workforce itself. There is much to learn from how students are already using AI and those insights could, and should, influence policy.

NFTE World Series of Innovation Project Showcase, 2024

Recognizing the burgeoning interest among students in AI and the imperative to equip them with implementation skills, our team has embarked on a journey of exploration. AI not only offers avenues for students to unleash their creativity and address business challenges but also presents exciting opportunities for online connectivity. Spearheaded by both the NFTE Southeast and Global teams, events held in the Metaverse have enabled students to exhibit their projects and engage with professionals within an AI-generated realm. One such event marked the apex of the World Series of Innovation (WSI), a global online competition encouraging young minds aged 13-24 to devise innovative solutions addressing contemporary global challenges and advocating for the UN Sustainable Development Goals (SDGs), with cash prizes at stake. Throughout the event, virtual participants spanning the globe had the chance to delve into the top 10 finalist projects, cast their votes for the People's Choice award, and forge connections with fellow attendees and innovators alike. AI, coupled with the Metaverse, emerges as a pivotal conduit fostering connections among individuals and catalyzing the exchange of transformative ideas.

Addressing Disparities: Gaps in AI Education Guidance

In the rapidly evolving landscape of education technology, the integration of AI into K-12 schools has emerged as pivotal yet largely uncharted territory. At the federal level, the introduction of the bipartisan AI Literacy Act (H.R. 6791) signifies a critical step toward acknowledging the importance of AI education. This act not only seeks to amend existing legislation to incorporate AI literacy within the broader framework of digital literacy but also emphasizes the importance of providing students with the essential skills to navigate a world driven by AI.

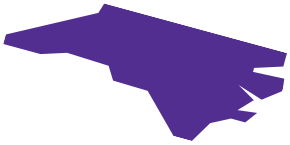
At the state level, the landscape of AI policy within K-12 education remains largely fragmented. While a handful of states—including California, Oregon,[7] Washington,[8] and North Carolina[9]—have taken proactive measures to provide state-wide guidance to school districts regarding the implementation of AI technologies, many others lag behind.[10] With just these few states offering official directives and about a dozen more in the process of developing guidance, there exists a glaring disparity in addressing the ethical, pedagogical, and practical implications of AI in educational settings.

7 Dusseault, B., & Lee, J. (2023). AI is already disrupting education, but only 13 states are offering guidance for schools. Center on Reinventing Public Education. https://crpe.org/ai-disrupt-ed-13-states/ (accessed 01/30/24)
8 Sumrall, Frank. (2024). AI in Wash. schools: Reykdal introduces statewide 'human-centered use'. MYNorthwest. https://mynorthwest.com/3947494/ai-wash-public-schools-superintendent-reykdal-statewide-guideline/ (accessed on 02/07/24)
9 Rash, Mebane. (2024). N.C. DPI releases guidebook on the use of AI in schools. EdNC. https://www.ednc.org/n-c-dpi-releases-guidebook-on-the-use-of-ai-in-schools (accessed on 02/07/24)
10 Dusseault, B., & Lee, J. (2023). AI is already disrupting education, but only 13 states are offering guidance for schools. Center on Reinventing Public Education. https://crpe.org/ai-disrupt-ed-13-states (accessed 01/30/24)

Existing policies primarily focus on academic safety and integrity, leaving significant gaps in educational innovation. As the demand for AI proficiency continues to escalate across various industries, the need for comprehensive strategies to engage and upskill the workforce becomes increasingly urgent. Youth entrepreneurship programs, like NFTE's, serve as promising avenues to integrate AI education seamlessly into curricula, equipping young entrepreneurs with both technical proficiency and entrepreneurial acumen. Only through collaborative initiatives at the federal, state, and local levels can there be assurance that educational systems are equipped to harness the transformative potential of AI while safeguarding against its potential pitfalls, particularly in fostering the next generation of innovative entrepreneurs.

State Policies Focused on AI in Education

In September 2023, California introduced a policy to manage how AI improves teaching and boosts STEM opportunities for students, while also addressing how schools can handle any issues that arise.



North Carolina released a guidebook in January 2024 that recommends that AI be integrated into all grade levels and curriculum areas responsibly.

Ensuring fair access to entrepreneurship education and AI is vital for empowering all students with the skills and resources necessary to innovate and succeed, thus promoting a more diverse workforce. Entrepreneurship education not only imparts practical business knowledge but also fosters a love for learning and cultivates essential skills such as teamwork and creative problem-solving crucial for navigating the evolving landscape of work. Additionally, generative AI tools offer comprehensive support by assisting with tasks ranging from text translations to idea generation, enhancing efficiency and effectiveness in learning. To address disparities, governmental policies across federal, state, and local levels must prioritize equitable access to these resources, as marginalized communities face the risk of being left behind without such opportunities. Ultimately, by ensuring equal access to entrepreneurship education and AI, society can unleash the untapped potential of all students, driving innovation, economic prosperity, and social advancement.

Conclusion

The advent of generative AI has sparked discussions among educators, policymakers, and the workforce regarding its profound implications. However, the existing federal and state policies concerning AI in education remain scant, leaving numerous school districts and educators to grapple with the integration of generative AI independently. Entrepreneurship education, with its emphasis on practical, real-world learning opportunities and innovation, equips young people with a diverse array of skills essential for navigating the complexities of the workforce. When paired with generative AI, students not only enhance their technological proficiency but also cultivate the adaptability and problem-solving acumen necessary to thrive in an increasingly dynamic and AI-driven world. Moreover, leveraging key components of entrepreneurship education can inform AI policy development by guiding the creation of frameworks that promote collaboration, nurture creativity, and uphold ethical standards. In doing so, entrepreneurship education not only equips students with the skills and knowledge to thrive in a technology-driven world but also contributes to the broader societal goal of leveraging AI for positive and sustainable innovation, ensuring a promising future for generations to come.

Contributors & Contact Information

Ashley Hemmy, Ed.D	Deputy Chief of Staff
Julianne Kasper	Program Manager, Mid-Atlantic
Anastasiia Kulchytska	Social Media Coordinator/Content Writer
Jennifer Fay	Chief of Staff

For questions and inquiries: reach out to policy@nfte.com