

"Although Al systems are powerful, they remain tools made by humans, and their uses are not preordained. Their effects are not inevitable."

– Dr. Alondra Nelson

"We need people designing technologies for society to have training and an education on the histories of marginalized people, at a minimum, and we need them working alongside people with rigorous training and preparation from the social sciences and humanities."

– Dr. Safiya Umoja Noble

EXECUTIVE SUMMARY RESPONSIBLE AI AND TECH JUSTICE: A GUIDE FOR K-12 EDUCATION

A guide designed for K-12 educators and students to support the critical interrogation of artificial intelligence and its implications on individuals, communities, and the world.

BACKGROUND

The recent advances in artificial intelligence (AI) have captivated the attention of students, teachers, investors, entrepreneurs, tech leaders, activists, and policymakers alike, with the global artificial intelligence market projected to grow from <u>\$515B in 2023 to \$2,025B by 2030</u>, over <u>45%</u> of the US population report using generative AI tools, and at least 25 states, Puerto Rico and the District of Columbia introducing legislation related to AI in 2023. Despite the potential of AI to identify breakthroughs in disease prevention and treatment, reduce business costs and increase worker productivity, and improve educational outcomes for students with disabilities and multilingual learners, advancements in Al are not without concern. Algorithms and Al tools have contributed to increased polarization, the proliferation of mis/disinformation, increased online safety and privacy concerns, and mental health challenges among teens and young adults. Biases in algorithms have misidentified Black individuals using facial recognition technology; resulted in health care and insurance decisions biased against Black patients; disproportionately denied loans to applicants of color; and demonstrated bias against women and individuals with disabilities in the hiring process. The lack of diversity in the AI workforce and among AI company leadership, boards, and investors coupled with the climate impact of AI technologies further demonstrate the profound implications of AI on individuals, communities, and society. At a time where there is so much promise and potential fear of the powerful breakthroughs in artificial intelligence, and where AI increasingly impacts our everyday lives, a comprehensive

understanding and critical interrogation of Al technologies must no longer be limited to a select few. We must begin by making fundamental changes in K-12 education to ensure all students and teachers are equipped with the knowledge, skills, and resources to become critical consumers and ethical producers of the next generation of technology.

The Responsible AI and Tech Justice Guide for K-12 Education is intended to articulate a new approach to teaching and learning in the era of rapid AI development and deployment, which prioritizes the interrogation of ethics, equity, and justice in the creation, deployment, and utilization of AI technologies and inspires the design and adoption of more equitable and just products and solutions. We anticipate that this guide and its utilization will continue to evolve and be refined over time.



RATIONALE

As the AI landscape continues to evolve rapidly, tech companies, advocacy groups, legislators, and individual citizens continue to grapple with how to effectively minimize risk, mitigate harm, and harness this powerful technology for the good of society. Yet, the examination of the technologies that are ubiquitous in students' and educators' lives, impact education, housing, employment, criminal justice, and democracy, and have disproportionate impacts on marginalized communities, are currently only a peripheral part of their formal educational experiences. While it is critical to delineate guidance for how educators, students, and schools use AI tools in the advancement of education, it is at least equally important to prioritize how students and educators interrogate ethics, equity, and justice in the creation, deployment, and utilization of AI and all technologies as a core component of a robust K-12 education. We argue that the critical interrogation of AI's development and impact must be a core component of K-12 computing education and we must intentionally center racial and social justice in the examination of all technologies.



DEFINITION

Responsible AI and Tech Justice is a robust and comprehensive course of study that utilizes an explicit racial and social justice lens to equip all students with the knowledge and resources to critically interrogate the ethical and equitable development, deployment, and impacts of AI, while simultaneously challenging, disrupting, and remedying the harms that these various technologies can cause within individual's lives, communities, and society at large.

CORE COMPONENTS

The six core components serve as a guide for educators, parents, policymakers, and advocates seeking to design learning experiences across educational settings, where both the critical interrogation of technologies and the disruption and creation of more ethical and equitable solutions are prioritized. The core components cover the large concepts and are complemented by a set of concepts, which provide suggested ideas to cover, while allowing space for creativity, innovation, and evolution in content as the space continues to rapidly evolve. It is our goal that these six core components will be used by a range of K-12 educators, including teachers, instructional coaches, administrators, and curriculum providers to directly inform their policies, practices, and resources.

The Six Core Components include:



Interrogate the complex relationship between technology and human beings, including human-computer interaction and topics of values, ethics, privacy, & safety.



2.

Explore the impacts and implications of AI technologies on society, including positive benefits, negative consequences, and the perpetuation of exclusion, marginalization, and inequality.



Interrogate personal usage of AI technologies to become critical consumers of products and address misuse, exploitation, and safety concerns.

5. Build a critical lens in the collection, usage, analysis, interpretation, and reporting of data.

Minimize, mitigate, and eliminate harm and injustice caused by AI technologies
through both the responsible and ethical creation process and individuals' and collective right to refusal.

CORE COMPONENTS & CONCEPTS

Core Component

- 1. Examine the Al technology creation ecosystem.
- 2. Interrogate the complex relationship between technology and human beings.
- **3.** Explore the impacts and implications of AI technologies on society.

4. Interrogate personal uses of AI technologies.

- 5. Build a critical lens in the collection, usage, analysis, interpretation, and reporting of data.
- 6. Minimize, mitigate, and eliminate harm and injustice caused by Al technologies.

Sample Concepts

- · History, purpose, and agenda of AI creation
- Designers and developers of AI technology
- · Investments and profit motives within AI
- · Key companies in the AI ecosystem (e.g., Big Tech/OpenAI)
- Dynamics of power and ethics in AI creation
- Utilization of AI tools in society
- Human-Computer Interaction
- Values, ethics, and morals in AI creation
- Privacy, safety, and consent
- Inclusion and accessibility
- Al for humanity and social good
- Humans vs. robots
- Algorithmic bias and discrimination
- · Al perpetuating inequalities
- Harms and dangers of social media
- Intersections of AI and the environment, education, politics, and the economy
- Al breakthroughs and positive impact
- Cost vs. Benefit of AI technologies
- Individual digital footprint
- Al and digital literacy
- AI and individual health, safety, and well-being
- · Al and individual privacy, security, and surveillance
- Al and individual data ownership and rights
- Self-preservation and coping strategies to address harms
- History and purpose of data collection
- Data types and data training methods
- · Data collection methods and web scraping
- Ethics and manipulation in data usage
- Biases in data sets (including training data)
- Data sovereignty and ownership
- Individual and community data protections
- Ethical, responsible, trustworthy AI design and production
- Inclusive community participation in AI design and production
- Opting out of harmful AI technologies
- Misinformation and Disinformation
- Reduction of environmental and economic harms
- Tech regulation, transparency, and accountability

FUTURE DIRECTIONS

The Responsible AI and Tech Justice Guide for K-12 Education represents a first step towards incorporating principles of ethics, equity, and justice in the critical analysis of artificial intelligence technologies within K-12 education and builds upon decades of critical scholarship and activism across disciplines ranging from computer science and machine learning to history, political science, and sociology. As technological break-throughs continue, as new solutions are uncovered, as new approaches are developed, and as new harms are revealed, we intend for this guide, its core components, interrogation questions, and resources also to evolve. Along with aligned partners, we will support efforts to develop curricular resources, professional learning opportunities, conduct research on interventions, and implement policy change. We invite feedback and collaboration from partners across disciplines to refine the guide, its core components, and its resources.

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Acknowledgments

The authors of this guide would like to extend sincere gratitude, thanks, and appreciation for the decades of work by leading scholars on artificial intelligence, bias in technology, racism in computing, education equity, social justice and technology, and technology ethics and justice. We appreciate the time and dedication of the Senior Advisory Board members and Advisory Committee Members who generously contributed their expertise to this guide. This project is sponsored by the Kapor Foundation, with generous support from co-chairs, Mitch Kapor and Dr. Freada Kapor Klein.