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Manifesto for Teaching and Learning in the Age of Generative AI: A Critical Collective Stance for Navigating the Future

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Overview

The rapid rise of Generative Artificial Intelligence (GenAI) technologies, such as GPT models and generative image tools, has fundamentally altered the landscape of education. This manifesto critically examines the implications of GenAI in education, emphasizing the need for thoughtful engagement with these technologies. It advocates for a collective stance among educators and institutions to navigate the complexities of integrating GenAI into pedagogical practices. This document serves as a framework for fostering meaningful and ethical use of GenAI, highlighting the potential benefits while addressing inherent risks.

Purpose of Research

The manifesto creates a foundation for critically engaging with GenAI in education. The primary purpose is to ensure that the integration of these technologies supports learning objectives, aligns with ethical practices, and mitigates potential harms. The guiding research questions are:

1. What are the potential affordances and challenges of incorporating GenAI into educational practices?
2. How can educators critically navigate the complexities introduced by GenAI to enhance teaching and learning outcomes?
3. What collective actions are necessary to develop policies, frameworks, and practices that promote ethical and effective use of GenAI in education?

Method

This manifesto is the result of a collaborative, reflective process involving input from educators, researchers, and practitioners across multiple disciplines and regions. The authors synthesized insights from ongoing discussions, existing research, and experiential knowledge to create a cohesive framework

for addressing the opportunities and challenges of GenAI in education. The methodology prioritized inclusivity, ensuring that diverse perspectives were considered to address global and local educational contexts.

Findings and Discussion

The synthesis of the data provided by the co-authors allowed the emergence of GenAI themes for integrating GenAI into educational contexts and themes for the challenges and concerns inherent in doing so. In addition, nine actions were identified that should be undertaken to promote ethical and effective use of GenAI in educational contexts.

Potential benefits of integrating GenAI into educational contexts and critical insights

Fifteen themes were identified regarding the potential benefits. Each theme reflected the potential benefits and critical considerations to foster a comprehensive understanding of the issues. Table 1 provides a summary of the themes.

Table 1. Potential benefits of integrating GenAI into educational contexts and examples

Potential Positive Benefits	Critical Insights
Timesaving and Efficiency	• Automating Time-Consuming Tasks • Enhancing Workplace Efficiency • Conducting Complex Analyses
Personalized Learning and Personal Tutoring	• Customized Instruction: • Adaptive Learning Paths • Immediate Feedback
Potential for Self-Education, Informal and Lifelong Learning	• Empowering Independent Learners • Facilitating Knowledge Acquisition • Supporting Skills Development
Preparing Students for the Future Workplace	• Foster GenAI Competences • Develop In-Demand Skills • Promote Ethical Awareness
Redefining Educational Practices and Assessment	• Focusing on Learning Processes • Challenging Assessment Methods • Highlighting Educational System Failings
Potential for Educational Innovation	• Educational Innovation • Impact Research • Research-informed practices
Enhancing Teaching Efficiency and Effectiveness	• Automating Routine and Administrative Tasks • Lesson Planning and Educational Material Creation • Formative Assessment

Supporting Learner Autonomy and Critical Thinking	• Developing Decision-Making Skills • Enhancing Critical Reasoning • Facilitating Independent Learning
Accessibility and Inclusivity	• Assisting Learners with Disabilities • Bridging Educational Gaps • Facilitating Multilingual Education
Supporting Faculty and Institutional Capacity	• Professional Development • Institutional Capacity-Building • Establishing Collaborative Communities
Ethical Use and Fairness	• Address Bias and Fairness • Maintain Trust • Promote Inclusivity
Enhancing Creativity and Innovation	• Unlock Creative Potential • Encourage Innovative Pedagogies • Expand Cognitive Horizons
Cross-Disciplinary and Interdisciplinary Learning	• Meshing Knowledge Domains • Facilitating Interdisciplinary Research • Encouraging Systems Thinking
Collaborative Learning and GenAI Assisted Interaction	• Acting as a Peer or Collaborator • Supporting Group Dynamics • Acting as a Mediator between Learners.
Enhancing Cognitive Capacity	• Reduce Cognitive Tasks • Support Schema Development • Augment Human Intelligence

Adapted from Bozkurt, et al., 2024

Potential challenges of integrating GenAI into educational contexts and critical insights

Drawing from the collective inputs provided by the authors, twenty key themes emerged regarding the challenges and concerns regarding the integration of GenAI into educational contexts. Each theme is accompanied by critical insights to foster a comprehensive understanding of these issues. Table 2 provides a summary of the themes.

Table 2. Potential challenges and concerns of integrating GenAI into educational contexts and examples.

Challenges and Concerns	Critical Insights
Digital Divide and Educational Inequality	• Unequal Access • Widening the Gap • Global Inequities
Bias, Discrimination, and Lack of Diversity	• Reinforcement of Stereotypes • Marginalization of Voices • Algorithmic Bias

Ethical Considerations	• Unethical Data Usage • Intellectual Property Theft • Lack of Informed Consent
Academic Integrity and Authentic Learning	• Plagiarism and Cheating • Erosion of Critical Skills • Superficial Learning
Quality, Reliability, and Misinformation	• Hallucinations and Errors • Spread of Misinformation • Inability to Verify
Loss of Human Values and Identities	• Absence of Empathy • Erosion of Human Connection • Corporate Values Over Human Values
Over-Reliance on Technology and Loss of Agency	• Technological Dependency • Reduced Critical Faculties • Erosion of Creativity
Undermining Human Cognitive and Learning Processes	• Intellectual Distance • Shallow Engagement • Stunted Epistemological Development
Impact on Critical Thinking and Higher-Order Skills	• Suppression of Critical Thinking • Deficits in Higher-Order Skills • Stifling Innovation
Lack of Transparency and Understanding	• Black Box Algorithms • Misconceptions about GenAI • Insufficient AI Literacy and competences
Impact on Educators and Deprofessionalization	• Job Displacement • Devaluation of Human Expertise • Impersonal Learning Experiences
Commercialization and Concentration of Power	• Profiteering by Big Tech • Limited Collaboration with Academia • Monopolization of Knowledge
Insufficient or Ineffective Regulation and Oversight	• Lack of Governance • Regulatory Gaps • Lack of Ethical Oversight
Privacy and Data Security Risks	• Data Misuse • Surveillance Risks • Vulnerabilities to Data Breaches
Potential Misuse and Safety Concerns	• Academic Dishonesty • Security Threats • Safety Concerns

Environmental Impact and Sustainability	• High Energy Consumption • Water Usage • Unsustainable Practices
Risks of Human-AI Symbiosis	• Erosion of Human Judgment • Dependence over Autonomy • Loss of Creative Agency
Lack of Representation	• Western-Centric Perspectives • Linguistic Limitations • Cultural Homogenization
Recursion and Knowledge Degradation	• Self-Referential Data • Dilution of Quality • Echo Chambers
Disruption without Preparedness	• Lack of Staff Development • Unrealistic Expectations • Resistance to Change

Adapted from Bozkurt, et al., 2024

Collective actions necessary to develop policies, frameworks, and practices that promote ethical and effective use of GenAI in education

The collective findings of the co-authors present nine actions that should be undertaken to promote ethical and effective use of GenAI in educational contexts.

First, GenAI is not just a tool. GenAI presents a potential symbiotic relationship between humans and machines that requires critical reflection on how we engage with it.

Second, no technology, including GenAI, is culturally and ideologically neutral. GenAI is not capable of true reasoning and produces output through predictive algorithms. It is essential that we address the side effects and unintended consequences of GenAI, ensuring that we critically examine its outputs and remain cautious about its impact on knowledge generation.

Third, we must rethink the very nature of education, teaching, learning, and assessment considering GenAI. GenAI could provide opportunities to move beyond a deterministic view of knowledge where the focus shifts to the learning process. In addition, knowledge is no longer confined to traditional classroom settings; it is accessible everywhere.

Fourth, with the increasing use of GenAI, the role of educators, administrators, and policymakers becomes critical. The impacts of GenAI are already being felt, and the future will depend on how we respond to these changes. As GenAI systems become more powerful, there is a growing need for a re-evaluation of current and future practices.

Fifth, it is important to acknowledge that GenAI is not a magic bullet, but it does offer the potential for meaningful change. Embracing GenAI encourages educators to step out of their comfort zones and engage in transformation and the need for GenAI literacy and competencies becomes critical.

Sixth, GenAI may deepen intellectual and creative distance. When GenAI is used to bypass crucial processes in developing ideas, we risk losing a sense of ownership over our ideas and how we communicate them. This raises existential questions about the nature of knowledge and our relationship to it when we no longer engage deeply with our own intellectual development.

Seventh, one of the biggest risks in using GenAI in education is its potential to replace meaningful interpersonal engagement. This reduces the role of human agency and undermines authentic learning experiences, leading to a system where GenAI trains itself on human inputs, rather than fostering human growth.

Eighth, a critical issue to consider is the role of values and human identity. GenAI lacks values, or worse, has its values determined by the corporations that own it. This poses significant questions about how AI shapes our understanding of ourselves and the world. GenAI reuses knowledge rather than creating new knowledge, which is a key function of the academic enterprise. Such a view highlights the importance of critically examining GenAI outputs and understanding the limitations of its knowledge.

Ninth, we must remain aware and alert of the hidden interests behind AI development. AI systems are often designed to serve the interests of for-profit corporations. In educational settings, it is vital to be cautious of how corporate interests might influence AI-generated information. If AI systems are driven by revenue or political agendas, they could shape the responses that students receive, hence impacting their learning and critical thinking.

Conclusions

Technological advancements rarely evolve in a deliberate, cautious, or thoughtful manner. They are introduced at an accelerated pace, often outstripping our capacity to fully comprehend their implications. However, we are not compelled to passively keep pace with this rapid momentum. We hold the collective power to consciously determine how, when, and with whom we engage with AI, as well as how we allocate resources for its adoption.

This moment demands urgency and intentionality, underscoring the necessity for robust, evidence-based research to guide our decisions. We must strive for a deep understanding of AI's potential, critically assess its impacts, and strategically integrate it into the educational ecosystem. The future of learning and human development hinges on our ability to make informed, deliberate choices—not as passive users, but as active architects of technology's role in shaping our lives. The opportunity to co-create this future is ours, and it requires deliberate action and shared responsibility.

References

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