AI for Everyone: Building Inclusive Futures

From Frankenstein to the Tin Man in The Wizard of Oz to WALL-E, we have long fantasized about machines coming to life. But when Stanford professor John McCarthy coined the term "artificial intelligence" in 1955, intelligent machines were still mere philosophy, even a form of science fiction.

For many people fiction became fact in November last year, with the launch of ChatGPT. The generative AI chatbot uses data from the Internet to type well-written, human-like responses to questions. Pi, a competitor technology, speaks the response in a sympathetic voice. Midjourney, Dall- E, Canva generate images instead of text, making it possible to translate ideas into images. Within four days of its launch, ChatGPT had a million users; within two months, a hundred million, the fastest-growing user base in history. And now ChatGPT and other large language models are seamlessly "under the hood" in common applications from Edge and Bing to Google Workspaces, Chrome and Google search. The future, it seemed, had arrived.

While much has been said about the potential risks of AI, less attention has been given to its benefits, particularly in:

- Advancing learning and literacy
- Bolstering economic development
- Strengthening democracy

The Museum of Science aims to fill this gap by organizing a series of online conversations focused on how AI can contribute to social good. This marks the beginning of our new initiative, the Center for AI and Public Learning.

The Burnes Center for Social Change, its Equitable Engagement Lab and AI for Impact program will support the Museum of Science in exploring how to use new AI-enabled platforms to host these national conversations, which will begin with a series focused on AI, learning and literacy.

The goal will be to promote robust and inclusive discussions about how to use artificial intelligence to advance equity, shed light on the persistent and inequitable reading outcomes in Boston, and surface concrete, practical and implementable solutions for funders, policymakers, education institutions and individuals.

The Burnes Center will work with the Museum of Science to:

1) Design a multi-part online engagement initiative designed to pinpoint problems, suggest solutions and turn those ideas into actionable and implementable proposals. Engagement should tap the intelligence and expertise of diverse and distributed audiences, especially in the Boston area. There needs to be more than one stage of engagement to afford participants different ways to get involved. Also the platform and process will differ whether the goal is to understand problems or design solutions.
2) Identify and customize AI-enabled platforms to use for each of these engagements. Platforms and processes should support inclusive, equitable and efficient ways for diverse communities to engage in these conversations.
3) Support the Museum in running these engagements, leveraging AI to make large-scale participation more intelligible and easily digestible for all participants.
4) Work with the Museum to identify partners who can support implementation of what gets designed and developed, such as Boston Public Schools.

APPENDIX 1: Sample Description of Online Engagements

Stage 1 - Pinpointing the Problem - To devise impactful and innovative solutions, we first need to understand the problems. We can use the All Our Ideas platform to ask the public about the greatest challenges they are facing with regard to learning and literacy. (see appendix 1). We will use AI to develop the initial catalog of problems.

Stage 2 - Suggesting Solutions: Ideathon - Once we prioritize among the problems, we can host a series of online conversations about solutions with caregivers, educators, students and innovators and researchers. We will use AI-enabled platforms for solution generation such as the Your Priorities platform or the Cortico platform (developed at MIT). We can also use PolicySynth to surface solutions we can discuss in these dialogues. We could also run an Ideathon/Hackathon at the Museum or Northeastern.

Stage 3 - Refining Solutions: Idea Workshop - We invite a representative sample of the American public to a live, online conversation to review and rate proposals. Here Remesh can help us create such a representative civic dialogue.

We could think about either a program where kids use generative AI to build learning tools. This could be a summer program for BPS students, where kids develop generative AI skills and apply them to create tools that can be used by schools, caregivers and community groups.

Alternatively, a summit with BPS to explore implementation of solutions.

APPENDIX 2 - Examples of Problems

1. Assessment Accuracy: Developing AI tools that can accurately assess students' reading levels, strengths, and areas needing improvement.

2. Identifying Reading Difficulties: Creating AI systems that can identify specific difficulties in reading, such as decoding, comprehension, or vocabulary challenges.

3. Diverse Learning Styles: Addressing the challenge of identifying different learning styles and preferences among students through AI analysis.

4. Cultural and Linguistic Variances: Designing AI solutions that can recognize and address challenges arising from diverse cultural and linguistic backgrounds.

5. Effective Data Collection: Ensuring AI gathers relevant data to diagnose reading challenges without compromising student privacy.

6. Differentiated Diagnosis: Developing AI systems that can provide tailored diagnoses for individual students, accounting for their unique needs.

7. Early Detection of Difficulties: Creating AI tools that can detect reading difficulties at an early stage, allowing for timely intervention.

8. Physical and Cognitive Disabilities: Ensuring AI diagnosis is inclusive, considering students with physical disabilities or cognitive differences.

9. Dynamic Progress Tracking: Designing AI systems that can track progress over time, allowing for ongoing diagnosis and adjustments.

10. Feedback Generation: Developing AI-driven feedback mechanisms that can explain diagnosis results to students, parents, and educators.

11. Interactive Assessment: Creating engaging and interactive AI-powered assessment methods that accurately diagnose reading challenges.

12. Teacher Collaboration: Ensuring AI tools provide insights that are easily understandable and actionable for educators to collaborate with students.

13. Technology Accessibility: Addressing potential disparities in access to AI-powered diagnosis tools among different schools and communities.

14. Balancing Human and AI Expertise: Determining the appropriate balance between AI-driven diagnosis and human expertise in educational settings.

15. Sensitivity to Individual Growth: Designing AI systems that recognize and adapt to individual growth trajectories and learning pace.