Day of AI is an initiative developed by MIT RAISE in collaboration with i2 Learning to introduce educators and students worldwide to AI literacy, to responsible design and use of AI, and to implications of AI for digital citizenship and society. In 2023, MIT RAISE commissioned an independent evaluation of the Day of AI initiative to assess whether it is meeting its goal of providing a set of easily-accessible AI literacy curricula for K-12 students that can inform and inspire a generation of diverse, ethically-responsible AI users and designers. The study addressed six overarching questions listed below with key findings. Data were gathered primarily using an online survey completed by 265 registrants, and interviews with 17 educators who taught the curricula to their students.

In summary, the evaluation suggests there is substantial demand from educators as well as students for high-quality, interactive, instructional materials about AI and its current and potential applications, and that educators from around the globe have successfully implemented the Day of AI curricula. Educators were almost invariably very complimentary about the quality of the Day of AI materials. Both educators and students gained knowledge about how AI works, key AI concepts, current uses of AI, and potential benefits and harms to society. In addition, learning more about AI increased their levels of optimism about the potential benefits of AI to society and about their own abilities to contribute to shaping the future of AI. The reported impact is impressive given how little time students engage in the Day of AI curriculum content relative to other topics and subjects they study.

Teachers implementing the curricula were generally highly educated, experienced, and very comfortable using computers. Over half of them took time to adapt the Day of AI curricula for their local contexts. As might be expected, they most often taught computer science, technology, or math. These educators often chose to implement the curricula unilaterally and on a voluntary basis.

Going forward, to extend the reach of Day of AI curricula beyond highly-motivated, self-selecting educators and move towards more institutional adoption, MIT RAISE could conduct outreach to education decision-makers such as state education board and local school board members; leaders of school districts, state education agencies, school networks, and schools; and parents to inform them about the critical need for AI literacy. In addition, MIT RAISE could seek to replicate localized Day of AI initiatives following the model of Day of AI Australia. These would involve collaborations with networks of schools, school districts, or professional educator associations, and working with local curriculum designers and educators in each instance to adapt the curricula for the local context. The curriculum adaptations would maximize feasibility of implementation within local constraints, include differentiated training and supports for teachers of varying background knowledge and skills (e.g., for teachers with a computer science background vs. those with no computer science training), and ensure congruence with local standards, integration with existing curricula, and cultural relevance.

1) Who is interested in the Day of AI curricula and why?

➢ Approximately 7,600 people from 136 countries registered to access 1-12 Day of AI 2023 curricula
➢ 65% of the registrants identified their roles as teachers
➢ 63% of the registrants were in the US, with at least one registrant from each of the 50 states and DC
➢ 1%-5% of the registrants were located in each of: India, Viet Nam, Canada, Spain, China, Mexico, the United Kingdom
➢ Commonly indicated goals for accessing the Day of AI curricula were: to get ideas and materials for teaching students about AI, to implement the curricula with students, and to learn about AI

2) Who led and participated in the Day of AI activities?

The Teachers:

➢ 190 of the 265 survey respondents taught one or more of the Day of AI curricula to students. 91% of these "implementers" identified their role as teachers or instructors, 6% were curriculum coaches, and 6% were parents (each person could select multiple roles)
➢ Implementers were 71% female; 16% Hispanic; 61% white, 15% Asian, 7% Black or African American, and 5% multiracial
➢ 78% of the implementers held a Master's or higher degree
➢ On average, implementers had 16 years of teaching experience
➢ 86% of the implementers were 35 to 64 years old
➢ The most common subject areas in which implementers held a degree were education, computer science, science, and technology
➢ The most common subjects taught by implementers were computer science, technology, and math
➢ Implementers expressed a high level of comfort using computers, averaging 9.26 on a scale of 0-10
➢ The most commonly taught curriculum was *What Can AI Do?* (for ages 5-7), followed by *ChatGPT in School* (for ages 8-18), and *Teachable Machines* (for ages 8-10)

The Settings and Students:

➢ 64% of the implementers taught the Day of AI curricula in government-funded schools and 21% taught them in private/independent schools
➢ 19% of the US government-funded schools were Title I schools, 6% were charter schools, 3% were magnet schools, 3% were special education schools, 2% were career and technical schools
➢ 73% of the implementers reported being the sole implementer of the Day of AI curricula in their school/setting, 22% reported that up to 5 teachers implemented the curricula, 4% reported that 6-10 teachers implemented them, and 1% reported that more than 10 teachers implemented them
➢ 95% of implementers taught general education students, 49% taught students with disabilities, and 40% taught students who are not fluent in the primary local language
➢ Implementers collectively taught the curricula to at least 11,884 individuals aged from under 5 to over 50 years old (including teachers and other staff members)
➢ Over half the implementations were with students of mixed ages but the majority reached students aged 9–18 years: 41% of the implementations included students of elementary school age (K-5 in the US), 68% included students of middle school age (Grades 6-8 in the US), and 63% included students of high school age (Grades 9-12 in the US).

3)   What AI-related concepts are teachers and students learning as a result of engaging with the Day of AI curricula?

➢ On average, survey respondents reported their level of knowledge about AI as 3.8 on a scale of 0-10 *before* engaging with the Day of AI curricula and 6.0 *after* engaging with the curricula, a statistically significant increase

➢ Averaging across all curricula taught, students' level of knowledge about AI was reported by implementers as 2.4 on a scale of 0-10 *before* engaging with the Day of AI curricula and 4.3 *after* engaging with the curricula

➢ Over 70% of implementers indicated that the curricula helped students a lot or to some extent in:
   o understanding how AI is currently being used
   o the mechanics of how AI works
   o the potential for AI to benefit people and society

➢ 50%-65% of implementers indicated that the curricula helped students a lot or to some extent in:
   o understanding the potential dangers of AI to people and society
   o applying AI concepts to complete a task
   o understanding how and why AI applications may be biased
   o understanding ethical implications of AI
   o understanding how AI applications may use data in ways that raise concerns about privacy
   o understanding how they themselves can contribute to shaping the future of AI
   o understanding why AI applications may raise concerns about equity
   o using AI to solve problems creatively

4)   What impact is the Day of AI content having on teacher and student perceptions of AI and their sense of agency in determining its place in their future?

➢ On average, survey respondents reported their level of optimism about the potential benefits of AI to society as 5.6 on a scale of 0-10 *before* engaging with the Day of AI curricula and 7.1 *after* engaging with the curricula, a statistically significant increase

➢ Respondents noted that it was helpful to see practical examples of AI being used to facilitate tasks, and that the focus on ethical use of AI helped alleviate concerns about misuse of AI

➢ 63% of survey respondents felt more able to contribute to shaping the future of AI as they learned more about AI

➢ 77% of survey respondents felt they could contribute "a lot" or "some" to shaping the future of AI *literacy* (i.e., people's ability to understand the role of AI in our lives, to evaluate its pros and cons, and to use it productively)

➢ Averaging across all curricula taught, students' level of optimism about the potential benefits of AI to society was reported by implementers as 5.0 on a scale of 0-10 *before* engaging with the Day of AI curricula and 6.7 *after* engaging with the curricula

➢ 61% of implementers reported that their students felt they can contribute a lot or to some extent to shaping the future of AI. 77% of implementers reported that students' sentiments on this topic improved as they learned more about AI

➢ All 15 Day of AI curricula scored 6 or higher on a scale of 0-10 for cultural relevance, averaging 7.0

➢ The curricula averaged 6.1 on a scale of 0-10 for how adequately they address issues related to equity

➢ The curricula averaged 6.0 on a scale of 0-10 for how adequately they address issues related to social justice

5) How are the Day of AI activities being integrated with existing schedules and activities?

➢ 80% of implementers delivered the curricula during regular class hours, 6% delivered them before or after school, 4% during lunch, 4% as part of end-of-term activities, 3% as part of summer school, and 3% during free periods for students

➢ The average amount of time students spent engaging with the Day of AI curricula ranged from 2.3 hours for *Personal Image Classifier* to 8.5 hours for *AI Blueprint Bill of Rights*

➢ The average number of sessions over which each curriculum was implemented ranged from two sessions to six

➢ Implementers spent between zero and 20 hours preparing to teach each curriculum. Per curriculum, preparation time averaged from 2 hours up to 6.75 hours.

6) How can the Day of AI activities be improved to actively engage more teachers and students?

➢ 85% of the implementers indicated that the Day of AI curriculum they taught was appropriately challenging for their students. 8% indicated that it was not challenging enough and 8% indicated that it was too hard for the students to understand

➢ 55% of the implementers adapted the curriculum to better suit their own context. Common adaptations were omitting, condensing, or modifying activities to fit into the available time or to avoid difficult content

➢ The majority of suggestions for improvement of the Day of AI curricula related to ways of minimizing didactic approaches to teaching and increasing student engagement. These included providing more opportunities for interaction with students, offering more advanced content and extensions including independent activities such as projects, and including more games or game-like activities

➢ Other suggestions for improvements focused on improving accessibility of the materials to more educators and students. These included providing training for teachers on how to implement the curricula and translating the curricula into other languages

➢ Suggestions for maintaining or improving the quality of the Day of AI content and resources included better organization of content on the website, keeping the content up to date each year, providing a sequenced progression of curricula, and providing differentiated activities to serve variable student needs and interests

➢ Implementers listed a number of ways to make the curricula more culturally relevant including the addition of non-US centric examples and providing content to introduce AI and its potential benefits to parents who may act as gatekeepers preventing their children from using and learning about it

➢ Implementers provided suggestions as to how the Day of AI curricula could better address issues related to equity which included being mindful that some AI-based technology is not affordable to low-income students, and increasing the focus on AI and people with disabilities

➢ Implementers provided suggestions as to how the Day of AI curricula could better address issues related to social justice including more attention to ways in which people of color have been harmed by AI and addressing how AI can be used to identify and combat discrimination

Recommendations

To further increase the reach and impact of the Day of AI initiative, MIT RAISE should:

I. Increase outreach to education decision-makers who can institutionalize AI literacy instruction

II. Replicate Day of AI initiatives in multiple locales

III. Provide a concise overview for instructors on content, audience, and sequencing for Day of AI curricula

IV. Plan for ongoing curriculum updates, revisions, and adaptations

V. Increase participation in Day of AI by more closely aligning with schools' existing priorities