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States Plan to Teach Artificial Intelligence in K-12

Leaders in K-12 computer science education from 27 states and 3 districts/territories met at a January 28-29 virtual workshop to develop plans for introducing artificial intelligence into their curricula. Workshop participants included officials from state education departments, school district representatives, practicing K-12 teachers, university researchers, and staff from educational nonprofit organizations.

The workshop was organized by the AI4K12 Initiative (AI4K12.org), a joint project of the Association for the Advancement of Artificial Intelligence (AAAI) and the Computer Science Teachers Association (CSTA), with funding from the National Science Foundation. Professor David Touretzky of Carnegie Mellon University, Professor Christina Gardner-McCune of the University of Florida, and Deborah Seehorn, representing CSTA, lead the Initiative.

"Since 2017 there has been a worldwide realization that we should be teaching children about artificial intelligence," Touretzky said. "We need to prepare our youth for the huge societal changes coming from technologies such as intelligent assistants and self-driving cars. At the same time, we should be encouraging students to pursue careers in these areas to help meet national workforce needs. China, the UK, and the EU are already implementing AI education plans."

The two-day workshop provided state delegations with opportunities for collaborative visioning, self-assessment, and goal setting through a state-level adaptation of the SCRIPT strategic planning tool developed by CSforALL, an organization committed to expanding K-12 CS education. The workshop sessions were co-facilitated by AI4K12's Gardner-McCune and CSforALL's Executive Director, Leigh Ann DeLyser. The Expanding Computing Education Pathways (ECEP) Alliance, focused on broadening participation in computing at the state level, also contributed to the workshop by consulting on the adaptation of their state team development model and State Summit Toolkit.

The workshop sparked new initiatives in several states to start working on their AI education plans or strengthen their K-12 AI leadership team. Several states are already updating their computing education standards to include AI, creating new AI courses, and providing opportunities for teachers to become AI-fluent. But some have still not fully developed their computing education programs and are just beginning to think about AI.

"Most K-12 teachers aren't yet familiar with AI and are eager to learn about it themselves" said Professor Gardner-McCune. "As they become comfortable with these ideas through new professional development opportunities resulting from the workshop's planning activities, they'll be better able to introduce AI to their students."

The AI4K12 Initiative is developing national guidelines for teaching AI in K-12, and has published a list of "Five Big Ideas in AI" that has been widely adopted by K-12 educators. An infographic poster explaining the five big ideas is available at AI4K12.org and has been translated into 14 languages.

The organizers are preparing a report on the workshop that will provide guidance for other states looking to develop AI education plans. With 23 states and several territories left to go, there is much work to be done to ensure that every American child has the opportunity to participate in the age of AI.

AI4K12 is planning future collaborative events with CSforALL and ECEP to continue advancing state and national K-12 AI education.

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