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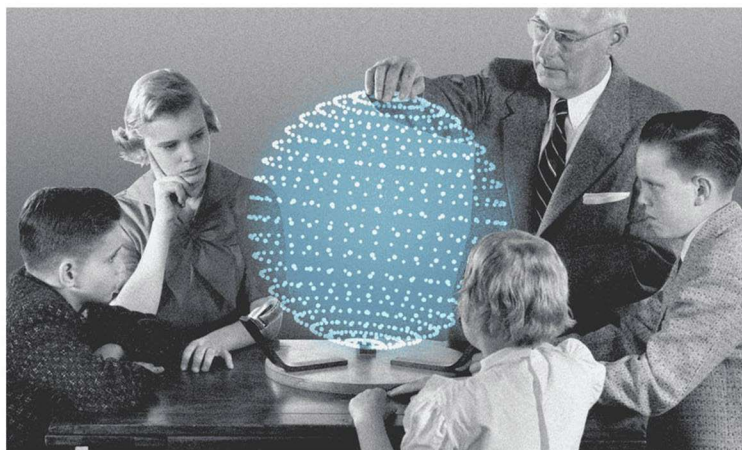
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ANALYSIS

Shockwaves & Innovations: How Nations Worldwide Are Dealing with AI in Education

Lake: Other countries are quickly adopting artificial intelligence in schools. Lessons from Singapore, South Korea, India, China, Finland and Japan.



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**By Robin Lake | August 7, 2023***No paywall. No pop-up ads.***Keep The 74 free with a donation during our Fall campaign. →**

Rapid developments in artificial intelligence, especially generative AI (which is trained to analyze large amounts of data and can produce original content) have taken U.S. schools by surprise. In part due to concerns over student cheating, many districts have passed restrictive policies limiting the use of AI in schools.

I wondered how countries outside the U.S. are dealing with these shockwaves, how they are employing AI more broadly to improve education and what lessons American schools can learn from their approaches.

I found that other developed countries share concerns about students cheating but are moving quickly to use AI to personalize education, enhance language lessons and help teachers with mundane tasks, such as grading. Some of these countries are in the early stages of training teachers to use AI and developing curriculum standards for what students should know and be able to do with the technology.

Several countries began positioning themselves several years ago to invest in AI in education in order to compete in the fourth industrial revolution.

Singapore's "Smart Nation" strategy, for example, aims to position the country as a world leader in AI by 2030 by bringing together researchers, government and industry. One goal is to help teachers better customize and improve education for every student, particularly those with special needs. An AI-enabled companion will provide customized feedback and motivation to students, automated grading and machine learning systems to identify how each student responds to classroom materials and activities.

One of the most promising applications of generative AI in education is the ability to tailor learning to individual students' needs, and there is a clear trend toward customization in other countries' educational strategies.



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South Korea has implemented AI-based systems to adapt homework and assignments based on students' educational levels and "tendencies and learning behaviors." Each child will have a personalized AI tutor and access to an online learning platform, allowing teachers to focus on social-emotional and hands-on lessons. The minister of education says these changes are necessary to allow public schools, which currently emphasize memorization, to provide the same type of personalized and deeper learning that private schools offer. He foresees a future where assessments happen throughout the normal course of daily assignments rather than in an end-of-course exam.

In India, ed tech company Embibe uses AI to clarify complex math and science concepts. Students can use a smartphone to scan a passage from a textbook, and the app uses 3-D imagery to help with visualization. AI is also being used in India to predict student performance, enabling early intervention.

Countries are also investing heavily in AI teacher preparation programs and national curricular requirements. Singapore recently announced a national initiative to build AI literacy among students and teachers to ensure they understand the risks and benefits of the technology. By 2026, training on AI in education will be offered for teachers at all levels, including those in training.

South Korea is investing heavily in preparing students. By 2025, the country aims to have AI coursework in its national curriculum across all grade levels, starting with high school. The Korean ministry of education's Keris unit is designing and piloting extensive teacher development around AI and other technologies. The ministry's Future of Education Center provides model classrooms where visitors can experience the use of advanced technologies in education.



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Finland, long admired for its high-quality education system and teacher-centric system, has embraced AI with a bold national commitment to educate its citizens with free online coursework. Roughly half of schools use the VILLE platform to give students and teachers immediate feedback and analytics on student assignments.

In China, the government has invested heavily — via tax breaks and other incentives — in tools, such as the adaptive tutoring platform Squirrel AI, which rely on large-scale data sets and camera surveillance. Most of these products focus heavily on improving performance on standardized tests, so students whose families can afford it get ahead. In countries like China, ethics, equitable access, privacy and other concerns are not high priorities, however.

In contrast, Finland's AI in Learning, a collaboration among a multi-disciplinary group of international researchers and companies, aims to promote equity and quality of learning locally and globally. The project has produced a number of scholarly papers on the ethical use of AI in education and on how these technologies can improve teaching and learning. Its members are designing and testing an intelligent digital system that assesses student wellness and feeds back insights to students and educators.

Evidence matters a lot right now, and many of these countries are investing in research to inform the effective use of new tools as well as to guide regulatory efforts. A research center, AICET, hosted by AI Singapore and funded by the Smart Nation and Digital Government Office, works with the Ministry of Education to launch projects that will improve the education system. As part of a five-year plan called AI@NIE, Singapore's National Institute of Education will invest in research and innovation to use artificial intelligence for education.

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Early guidelines are in the works, in the U.S., but they are coming late. Though the Department of Education recently released a strong [policy paper](#), and the American Federation of Teachers put out an [AI resolution](#), the European Union issued guidelines two years ago and recently updated their proposed [AI regulations](#). Japan recently released [guidelines](#) and has selected a number of schools to pilot them as the government weighs which regulations make most sense.

The U.S. government could start by adding considerations for the use of AI to its [National Educational Technology Plan](#), such as how states and districts should best minimize risks and maximize opportunities. Providing direction about how best to prepare teachers and students for the coming tsunami would help connect the dots to a broader strategy to make U.S. students prepared and competitive in the AI economy.

The push other countries are making toward radically customized education is also one the U.S. should take seriously. Too many education policy people dismiss personalized learning as a remnant of a [largely failed](#) effort in the early 2000s, but other countries see that high-quality curriculum can be leveraged by AI in revolutionary ways and can be tailored in real time to a student's particular level.

It's time to up our game on this front and embrace AI-enabled personalized learning like [Khanmigo](#), in part by investing in a national research agenda in partnership with companies to learn whether and how AI can accelerate learning. Finally, we owe it to teachers and districts to offer a comprehensive AI training program ASAP. This is too important a support to be left to schools, districts or even states to figure out.



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As the U.S. continues to explore the potential of generative artificial intelligence in education, the federal government and states must accelerate efforts to compete and thrive in an AI-powered world. It will also behoove education leaders, researchers and technology developers, however, to collaborate and share best practices and policies to unlock new frontiers in education and equip students with the skills and knowledge needed for success in an increasingly complex world.

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