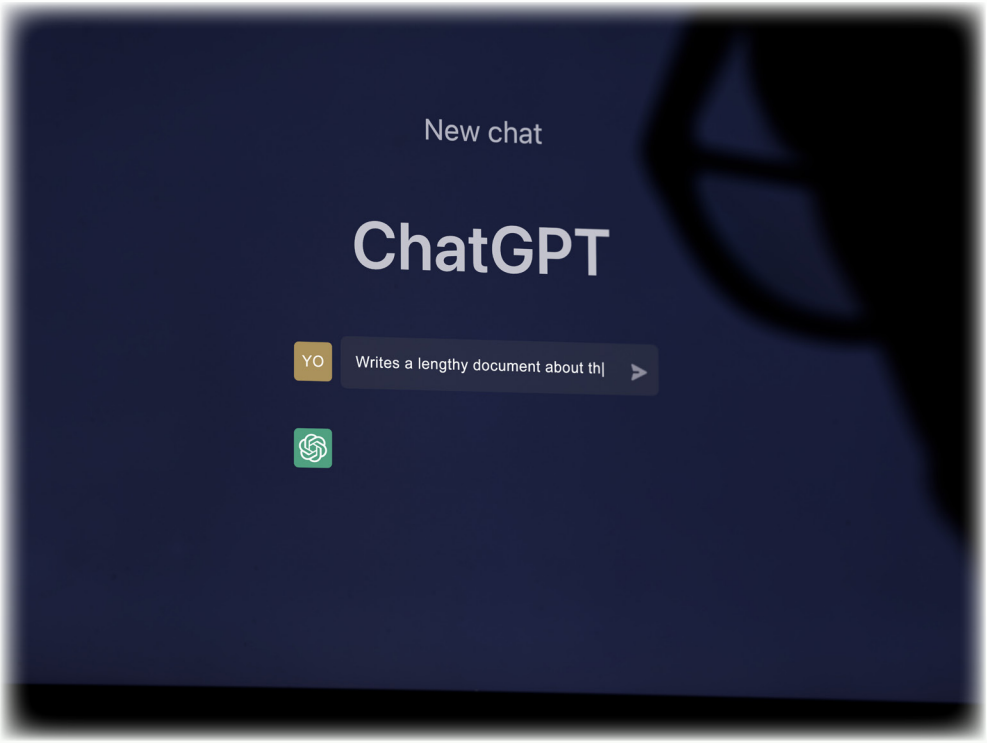
NEPC Review: A New Direction For Students in an AI World: Prosper, Prepare, Protect (Brookings Institution, January 2026)



Reviewed by:

William R. Penuel
University of Colorado Boulder

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National Education Policy Center

School of Education
University of Colorado Boulder
nepc.colorado.edu

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NEPC Staff

Faith Boninger
Publications Manager

Paul Thomas
Academic Editor

Elaine Duggan
Production Design

Alex Molnar
NEPC Director

Kevin Welner
NEPC Director

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Summary

A recent Brookings Institution report presents a synthesis of a year-long study of generative artificial intelligence (AI) in education. It outlines benefits and threats generative AI poses to young people's learning and development, concluding that its potential harms outweigh its benefits. The report describes three focus areas for action to reverse that conclusion: promoting AI tools that support evidence-informed pedagogies; developing holistic AI literacy; and promoting trustworthy AI tool design, governance, and guidelines for safety, privacy, and healthy development. A strength of the report is the breadth of perspectives and research studies it includes. A weakness is that it offers no systematic weighting of evidence based on quality or type of evidence. One result of this weakness is not problematic: Readers who are AI skeptics will find passages to support their beliefs, as well readers who are AI advocates—regardless of the report's overall conclusions. Another result is more troubling: It provides decision makers with a wide range of ideas, yet little help in selecting and evaluating options for ensuring that AI is used to benefit rather than harm young people's well-being. In addition, the report notes that all interest holders are important decision makers, but it does not say which interest holders should implement each of its 12 recommendations. Ultimately, the report provides a useful resource for those attempting to wrap their minds around issues concerning generative AI in education, but that usefulness is constrained by an apparent reluctance to close off the possibility that in the future, AI might bring significant benefits.

NEPC
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I. Introduction

The rapid spread of generative artificial intelligence (AI) is an urgent concern in education. Unlike previous generations of educational technology that allowed time for educators to plan for its integration, AI just "arrived" on the scene, disrupting teachers' longstanding practices for planning, teaching, and grading.[1] In just three years since ChatGPT has released, nearly all U.S. teens say they have used generative AI in their daily life.[2] Millions are using AI companions, such as chatbots that function as "digital friends" or characters to text, for social and emotional support. A recent nationally representative survey conducted by researchers for Common Sense Media found that 72 percent of teens had used an AI companion, with 52 percent reporting regular use.[3]

Meanwhile, investments in companies promoting AI in education have boomed and are expected to grow. Market researchers anticipate that by 2030, investments will soar to more than $26 billion.[4] These investments are spread across many areas. Many AI applications focus on personalization of student learning, but several also support teachers in lesson planning and grading. Still others focus on mining data from student information systems to identify students at risk of failure and enhance the efficacy of high-dosage tutoring programs. Similar to educational technologies of the past, providers' promises outpace evidence for their claims.[5] A report that aims to synthesize some of that evidence comes at a crucial time when companies are pitching growing numbers of AI applications to schools and districts.

A New Direction for Students in an AI World: Prosper, Prepare, Protect by Mary Burns, Rebecca Winthrop, Natasha Luther, Emma Venetis, and Rida Karim, released by the Brookings Institution, addresses what is currently known about how generative AI is being used by young people and educators both in and out of school.[6] It also identifies actual and potential harms of generative AI use on students' cognitive and socioemotional development. The report concludes with a "call to action," detailing 12 recommendations under three pillars constituting a framework for shifting AI use from harm to good.

II. Findings and Conclusions of the Report

The report finds that while applications for AI in education hold promise, currently their harms outweigh their benefits. The report cites potential benefits as promoting more equitable access to opportunity, facilitating teacher planning, improving and personalizing learning, and advancing assessment.[7] The risks include reducing students' opportunity to engage in thinking needed to support their cognitive development, degrading trust in education, threatening student safety and emotional well-being, eroding students' autonomy and agency, and expanding rather than closing opportunity gaps.[8] The report concludes these risks outweigh the benefits because too few safety protections for students and spaces devoted specifically to supporting student learning and development exist.[9] Consequently, the use of generative AI may result in students offloading the necessary cognitive work to develop knowledge and skills needed for future education, work, and participation in civic life.

Of particular concern, the report notes, is the growing dependence on generative AI not just for cognitive work but for social companionship and mental health support.[10] The large number of youth users of these platforms, combined with limited regulation and business models that focus on gaining and maintaining engagement, makes generative AI particularly risky for youth. Studies focused on effects of social companion sites especially designed to support mental health and grounded in clinical theory and practice suggest their promise;[11] however, most young people rely on commercial sites with limited evidence of effectiveness. Moreover, suicides resulting from AI companion interactions and the tendency of these systems to create dependencies akin to addiction[12] are alarming and add to concerns about AI tools and students' well-being and safety. Additional problems include the potential for data exploitation, heightened exposure to explicit and biased content, and the risk that AI amplifies polarization.

While it is not too late to change the course of AI in education, the report stresses the need for action now to ensure that applications and uses of AI promote stu-

dents' learning, socioemotional development, and well-being. These actions include steps to ensure that AI supports evidence-based pedagogies;[13] to develop students', educators', and parents' AI literacy;[14] and to ensure privacy and safety of AI applications.[15] The report concludes with 12 recommendations in each of three "pillars" it proposes—prosper, prepare, and protect—to secure a future in which AI in education's benefits outweigh its harms. Examples of these recommendations include using co-design to develop applications specific to education while supporting rich learning experiences ("prosper"), vetting AI applications against shared criteria that prioritize human agency over decision making about when and how to use AI ("prepare"), and implementing procurement processes that prioritize student privacy, safety, and security ("protect").

III. The Report's Rationale for Its Findings and Conclusions

The report relied on a combination of stakeholder and expert perspectives as well as a literature review to derive its conclusions.

The data on expert perspectives included 72 focus groups with educators in different positions and a Delphi panel of 21 experts[16] addressing matters that "appeared to have no definitive answers."[17] Stakeholder perspectives came from group interviews with 117 teachers, 68 students, and 41 parents. The topics of these interviews were AI risks and benefits, and their ideas for how to address risks. The authors consulted 232 experts regarding the study's methodologies and findings.

The broad literature review included individual studies, literature reviews on AI in education, policy documents, essays, reports, and case studies. A total of 425 documents were used to develop the conclusions and recommendations from the study. The documents were primarily English language, yet they came from 50 different countries across the world. The integration of findings relied on a "pragmatic approach"[18] to synthesis.

IV. The Report's Use of Research Literature

The report cites a wide range of studies, a strength given that studies of generative AI—the type of AI the report examines— are recent.[19] The underlying transformer models necessary to perform the kinds of tasks tools like ChatGPT can perform—producing human-like responses to human queries—have been developed only in the last eight years.[20] In addition, the report's review spanned research outside the U.S., since research on AI in education is being conducted across the globe. When individual study findings are reported, some important details are included to help readers

with expertise in research evaluate the trustworthiness of findings. Throughout, the source of data for claims is clearly identified, whether from a report, research study, or a focus group, for example.

The report rightly highlights the evidence base for intelligent tutoring systems as relevant to evaluating the potential of AI to personalize learning. A key purpose behind such systems is to provide practice problems and support attuned to individual students' current knowledge, skills, and abilities.[21] AI systems based in sophisticated models of learning, and carefully calibrated over decades of research, show promise. For example, reviews suggest that such systems can optimize learning for individual mastery in specific learning domains such as algebra.[22] Their potential contrasts with unfounded claims made by education technology companies about the personalization enabled by generative AI.

While the literature included in the review speaks to goals other than personalization for integrating AI into teaching, such as support for collaborative problem solving, it gives few examples of applications that focus on these different visions for what AI could do. In addition to generative AI serving as a "crutch" for students that substitutes their own labor for that of an AI,[23] it may also diminish students' focus on learning from interactions with peers and their ideas. The latter form of learning develops critical "durable skills" for collaboration that young people will need to navigate complex, ill-defined problems with no simple solution.[24] In fact, research of computer-collaborative supportive learning supports the generation of a research agenda around this form of learning, as developers co-design and test applications where AI might be used to augment learning.[25]

Notably absent from the report's review is literature that addresses the likelihood that the energy requirements of generative AI will exacerbate climate change.[26] By excluding literature related to the potential harms (and benefits) of AI use to the climate, the report perpetuates a common problem in social science research: ignoring impacts on the nonhuman world and on the sustainability of our own communities in evaluating the costs and benefits of interventions now and for future generations.

V. Review of the Report's Methods

A strength of the report is the breadth of interest-holder perspectives and research studies it uses to synthesize the findings and recommendations. Yet it offers no systematic weighting of evidence based on quality or type of evidence. It mixes evidence from focus groups with evidence from individual studies and research syntheses without providing clear signposts for readers as to which evidence might be most relevant and trustworthy, or which evidence might best support its own recommendations. The "pragmatic approach" it reports as the method for the literature

review[27] is not an accepted methodology. In fact, many systematic procedures exist to enhance the trustworthiness of findings for syntheses.[28] An experimental study showing benefits of AI's personalization should be weighted far more than experts' opinions about the potential for AI to transform learning, especially if the experts are interested parties (i.e., developers of innovations being marketed to schools). In addition, context likely matters a great deal: The Americas are distinct from Europe and Africa, and studies of AI's harms and benefits conducted in systemically marginalized communities are likely to yield different findings and have different implications than those in privileged communities. A weighting of research evidence based on quality criteria, as well as an analysis interpreting how context might shape findings, would have been helpful.

The field of learning technologies has long had a "hothouse" problem: Innovations that demonstrate potential when highly supported by external partners cannot be sustained after the research ends.[29] This distinction is important, since many of the claims made in the report about what AI *can* do are based on studies that have been conducted where extensive support for implementation exists. The report notes implementation is key, but neglects to distinguish findings about what might be beneficial from findings that show benefits that can be sustained in real-world educational systems. If benefits are possible but *not likely*, this shifts the balance further toward the harms outweighing the potential benefits of AI for improving learning and development.

VI. Review of the Validity of the Findings and Conclusions

Because the methods of synthesis were not described and studies did not have clear inclusion or inclusion criteria, evaluating the validity of the findings and conclusions of this report is difficult. Methods of synthesis help readers know how particular pieces of evidence were selected for the report and how individual studies, focus group interviews, and expert consultations were weighted in the development of conclusions.

There is "something for everyone" to take from this report, be they an AI enthusiast looking to promote its use in a school system or a deep skeptic of AI in education. The wide-ranging text offers many examples for individual readers to call on to support their own positions.

That said, looking at the overall conclusions at the outline level, as well as the recommendations, there is some support for many of them, particularly the concerns raised about AI's potential harms. Less trustworthy are claims about AI's potential benefits, given the heavy reliance on individual studies showing AI's promise in highly supported settings.

VII. Usefulness of the Report for Guidance of Policy and Practice

This report presents recommendations and identifies stakeholders for recommendations, but it does not clearly link these to the specific decisions made by these different interest holders. As a result, any given interest holder (e.g., an education leader) will have to sift through pages of text to find a recommendation on which they might act. For a report that highlights the importance of action now, it is largely weak on identifying decision points and decision-making bodies—outside procurement, legislatures, and Congress—that are consequential.

The report does include many ideas, both tested and untested, for promoting effective learning with AI, co-designing AI tools with key interest holders, and protecting student safety. A reader in search of additional details regarding a particular strategy can find in the report information about where to read more deeply and identify which groups are associated with that strategy. This report may be good for broadening decision makers' thinking and ability to anticipate potential benefits and harms of AI. But it offers no clear blueprint for changing the trajectory of AI in education—particularly in a political environment largely hostile to regulating AI and in educational systems overwhelmed with demands to respond to each new AI-related challenge or product presented to them.

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