Understanding and Supporting K-12 School Leaders' Current Decision-Making about AI Uses in Schools

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Introduction

Since the launch of ChatGPT in November 2022, there has been a lot of discussion about the potential of generative artificial intelligence (GenAI) to transform learning and teaching in K-12 education in both positive and negative ways. However, realizing any of the potential of GenAI, and AI more generally, for K-12 education will depend first of all on how uses of AI are encouraged, managed or even allowed in K-12 schools. K-12 leaders in various positions at the building and district level play a big role in these decisions, thus becoming de-facto enablers or gate-keepers for AI applications to K-12 education.

With the goal of informing future research and interventions about leveraging AI for more inclusive and effective K-12 education, in this white paper we aim to contribute to a better understanding of what may impact K-12 leaders' decisions about how AI should be used in their schools, as well as suggest some concrete ways to inform and support these decisions. The considerations reported here were informed by the findings of a one-year research project undertaken with the support of the National Science Foundation (NSF).

EXECUTIVE SUMMARY

Factors that may impact K-12 leaders' decision-making about AI:

1. K-12 leaders find making decisions and creating policies about AI especially challenging because of lack of guidance and rapid technology changes.
2. Most K-12 leaders have moved beyond the initial focus on preventing "cheating" with AI, while recognizing that AI will have major implications for assessment.
3. K-12 leaders are concerned about specific potential risks of AI for K-12 instruction, while recognizing the many potential benefits.
4. K-12 leaders recognize many benefits of having K-12 educators using AI to support their own work.
5. K-12 leaders appreciate that using AI in K-12 education has the potential to both exacerbate and help remedy current inequities in K-12 schools.
6. K-12 leaders recognize the need for professional learning for all constituencies in order to realize potential benefits and manage risks associated with AI usage.

Recommendations for K-12 leaders to inform their decision-making about AI uses:

- Consider both "sinking the boat" and "missing the boat" risks of using AI in schools.
- Keep in mind the distinction between using AI as "assistant" versus "replacement".
- See challenges presented by AI as opportunities to re-examine current practices in K-12 schools.
- Invest in high-quality professional development for all stakeholders.
- Develop a shared expectation that decisions made about AI will need to continue to evolve along with advances in this technology.

Recommendations for other entities about how they could support K-12 leaders' decision-making about AI uses:

- *State education departments:* Quickly provide guidance, with the expectation that it will be subject to change.
- *Professional organizations/experts:* Provide updated advice and accessible resources about possible applications of AI to K-12 education and their implications.
- *Educators involved in K-12 leadership professional development and/or preparation:* Develop capacity to provide high-quality professional development about AI and its applications to K-12 education, targeted for specific audiences.
- *Communities/the public:* Appreciate the complexity and temporary nature of any decisions made about AI uses in schools.
- *Tech developers:* Consider the challenges and concerns voiced by K-12 leaders as next generation AI technologies and their educational applications are developed..

About this RAPID project

In September 2023 our team was awarded a one-year RAPID grant from NSF (award #2333764) to gather information about K-12 leaders' perceptions and experiences about AI and its implications for K-12 education, through the combination of in-depth interviews followed by a survey. From October 2023 to January 2024, 42 semi-structured hour-long interviews were conducted via Zoom with K-12 leaders representing a variety of roles and districts within Western New York State. Insights gained from the interviews informed the design of a survey that was deployed in April-June 2024 to a total of 1138 K-12 leaders, representing the entire population of building principals, superintendents, directors of technology, and district-level administrators in charge of instruction/curriculum, across 179 districts within 17 counties in Western New York State. 159 completed surveys from 86 of the targeted districts, representing a 14% response rate, were received and analyzed.

Given the time-sensitive nature of this information and our goal of informing K-12 leaders' future decision-making about uses of AI in their schools as well as future research and interventions, we immediately engaged in multiple dissemination efforts that have included the creation of online resources for K-12 leaders and other educators as well as traditional publications and presentations. In what follows, we summarize key insights gained from both the interviews and survey about K-12 leaders' perceptions of AI and its implications for K-12 education, while referring to specific dissemination products for more detailed information about specific findings and the research process that led to these findings.

When reviewing the findings reported in this document, there are a few caveats to keep in mind. First, these findings represent K-12 leaders' perceptions at the time the data was collected, and we should be prepared for these perceptions to change over time given that GenAI technology and its applications to education continue to rapidly evolve. Second, despite our efforts to recruit a diverse sample of K-12 leaders for our interviews and survey, it is likely that only individuals feeling sufficiently knowledgeable about AI uses in K-12 schools were willing to be interviewed or to take a survey about that topic, and as such their responses may not be fully representative of the entire K-12 leader population.

Factors that May Impact K-12 Leaders' Decision-Making about AI

1. **K-12 leaders find making decisions and creating policies about AI especially challenging because of rapid developments and needs for guidance.**

K-12 leaders voiced their discomfort in having to make decisions about how AI could be used in their schools, as they felt they did not have sufficient information and guidance. This was due in part to their limited understanding of AI and their worry of incurring some major risks by allowing its use - especially student use. An even more important reason, though, was that this technology is so new that very little guidance from state education departments and experts were available at the time of our interviews and survey. The rapid pace of change in AI technology further compounded the problem.

Given these considerations, it should not be surprising that, by the end of the 2023-24 school year, only one of the districts included in our study had adopted a specific AI policy - although decisions about whether or not to ban certain AI tools or uses in their schools had to be made in the meantime. A key reason for not having an AI policy in place was the desire for retaining flexibility and keeping opportunities open for exploration during a time of rapid change and lack of state regulations.

As alternatives to creating new AI policies, several districts decided instead to reinterpret or revise current policies (for example, student conduct) in ways that account for possible uses of AI, or to issue guidelines (rather than policies) as a way to establish some "guardrails" when using AI that would help mitigate cybersecurity threats and other major risks without precluding experimentation. Most importantly, many K-12 leaders pointed out the need to accept the necessity to make only temporary decisions about AI that will need to be continually reviewed and revised, as AI technology and its applications continue to change.

(For more details and interview quotes on this point, see the open-access article published on Vanguard - Vaughan-Brogan & Miller, 2024)

2. **Most K-12 leaders have moved beyond the initial focus on preventing "cheating" with AI, yet recognize that AI will have major implications for future assessments**.

While the need to prevent students' unauthorized uses of AI in tests and assignments seemed to dominate the discourse during the year following the launch of ChatGPT, it is worth noting that being able to detect student uses of AI was not mentioned as a priority by any of the leaders we interviewed and was identified as such only by 10 survey respondents. While cheating due to GenAI may not have been identified as a priority by school leaders, several interviewees reported that it is still a significant concern for some of their teachers. At the same time, while recognizing that GenAI tools present a considerable challenge to our current assessment systems, some pointed out that this could turn out to be a positive outcome of using AI, if it results in pushing schools to develop better ways to assess student learning than what has been used to date.

3. **K-12 leaders are concerned about specific potential risks of AI for K-12 instruction, while recognizing the many potential benefits.**

The K-12 leaders we interviewed and surveyed identified three major ways in which AI could be beneficial for K-12 students:

A. ***Better preparing students for their future workplace****:* As AI is increasingly used in the workplace, K-12 students should be prepared for it, and one way to achieve this is for them to learn to use AI in safe, ethical, and effective ways while in school.
B. ***Helping "level the playing field" for currently underserved students****:* GenAI tools can increase access and success for English Language Learners as well as students with some disabilities, for example by adapting readings or instructions through providing in-the-moment translations in a student's native language and/or rewriting texts for a more appropriate reading level.
C. ***Making instruction more effective through personalizing learning****:* GenAI tools may help differentiate assignments, and even entire curricula, so as to better address individual student interests, learning preferences, background knowledge, and learning rates, in ways that were not possible before.

At the same time, K-12 leaders also identified a number of risks, which made them cautious about allowing the use of AI tools in their schools without further information and considerations. These risks included most notably:

D. ***Concerns regarding the ethical use of AI****:* In addition to concerns about academic honesty and related learning losses, some K-12 leaders wondered whether some *teachers'* or *administrators'* uses of GenAI to support some of their own core tasks should or should not be considered legitimate. They also worried about dangerous and nefarious uses of AI, such as cyberbullying or students potentially creating deep fakes.
E. ***Concerns around cybersecurity risks****:* Most K-12 leaders expressed fear about the consequences of entering confidential information into GenAI tools that may make unauthorized use of the data, as well as the potential for increased risks of cybersecurity attacks to school systems when using GenAI tools that may open a pathway within a school's communication infrastructure.
F. ***Concerns around accuracy and bias in AI outputs***: Several K-12 leaders were concerned that GenAI tools may provide incorrect answers that could be misleading and even potentially dangerous unless verified. Some also revealed their awareness that GenAI outputs may reflect inherent biases that need to be identified and corrected.
G. ***Concerns about replacing people/jobs****:* Although very few K-12 leaders raised this concern, especially with respect to teachers, some recognized that using AI to substitute for tasks previously performed by K-12 personnel may eventually result in job losses.

It is important to note that, among these risks, privacy breaches and cybersecurity risks were those raising the greatest concerns and those that most influenced decisions to ban the use of GenAI tools in some schools, at least for the time being and especially on the part of students.

(A more detailed analysis of interview findings about this point can be found in paper accepted for the FIE conference - Mason et al., forthcoming)

4. K-12 leaders recognize many benefits of having K-12 educators using AI to support their own work.

From what K-12 leaders reported, we identified four complementary types of possible uses of AI by K-12 educators, each associated with specific perceived benefits and risks:

A. ***Using AI in routine, every-day tasks***: Many K-12 educators shared their adoption of GenAI for daily tasks, appreciating the new functionalities available as well as the significant time savings. While this represents the most straightforward and perhaps least controversial application of AI, it may result in changing many current everyday practices, including the previously noted care required about entering personally identifiable information into AI tools as well as reviewing and editing the outputs AI generates.
B. ***Using AI to support instructional tasks***: Using AI tools to support the creation of instructional materials, learning/assessment activities, or even entire lesson plans may be appealing not only because of the teacher's time saved, but also for the potential of creating better and more differentiated learning experiences for students. However, this use of AI may be more controversial and difficult to accept given that these tasks are at the very core of the teaching profession, and shifting to using AI may challenge teachers' own professional identity as well as radically change expectations and working conditions for future K-12 teachers.
C. ***Using AI to improve back-office/school operations****:* Using AI to make specific school and district operations (such as budgeting, scheduling, ensuring cybersecurity) more efficient and effective was perceived by several K-12 leaders as having great potential for the future - even though very few indicated that these uses were already happening in their schools. This use was also where the greatest risks were identified, given the more severe consequences of possible privacy and cybersecurity breaches, inaccuracies caused by GenAI "hallucinations" as well as potential biases.
D. ***Using AI to support decision-making***: While none of the school leaders we interviewed and only a few who responded to the survey reported using AI in their decision-making, most acknowledged that AI could indeed add value when gathering information, generating and evaluating alternative solutions, supporting data analysis, and even countering human emotions – yet everyone was adamant that decisions should never be left to AI, but rather the human should always remain in charge. Some concerns were also raised about potential biases inherent to AI systems because of the data sources used in training their algorithms.

It is worth noting that, despite their differences, all of these uses were characterized by the desire to employ the power of AI to *assist* rather than *replace* the K-12 educator in performing the targeted functions.

5. K-12 leaders appreciate that using AI in K-12 education has the potential to both exacerbate and help remedy current inequities in K-12 schools.

Our interview and survey data suggest that K-12 leaders recognize that student learning opportunities and future outcomes may be affected by both unequal access to AI tools and unequal ability to use AI effectively. As a result, some of the survey respondents noted that decisions to preclude or limit student access to AI in school may put students who do not have access to these technologies at home at an increased disadvantage. At the same time, even more than providing students with access to the technology, K-12 leaders were concerned about the need for schools to prepare all students to use AI effectively and ethically.

Several K-12 leaders also expressed the view that using AI in K-12 education has the potential to increase access to learning opportunities and academic success for students with special needs, who have been historically underserved in K-12 schools - including English Language Learners

(ELLs) and students with certain types of disabilities. This could occur through a combination of making learning more accessible by using specific AI tools, increasing personalized learning as made possible by using AI, providing more time for teachers to work with these students one-on-one or in small groups, and improving communications with their families. At the same time, we also saw awareness among K-12 leaders that AI tools may include biases that may disadvantage students from minority groups, if left unchecked.

(An elaboration of these points, supported by both interview quotes and survey results, can be found in the paper we submitted for the 2025 AERA annual meeting - Borasi et al., under review)

6. K-12 leaders recognize the need for professional learning for all constituencies in order to realize potential benefits and manage risks about AI usage.

Across the board, our respondents pointed out the need for a better understanding of AI affordances as well as risks not only by students, but also teachers, administrators, and even families - and also shared that not much professional learning about AI had yet taken place for these various constituencies. It was interesting to learn, though, that a number of districts were proactively encouraging and preparing their staff to make use of AI to support their work *first,* as a way to personally understand the value and limitations of AI tools, and thus better envision how such tools could be used effectively and responsibly with students.

A need was also identified for more information about AI to be shared with staff, students, and the community. At the same time, several K-12 leaders emphasized their desire for resources to be very concise and targeted, taking into consideration the limited time and competing priorities of each specific audience.

Recommendations to support K-12 leaders' decision-making about AI uses

Based on what we learned from our interviews and survey, we have the following recommendations for K-12 leaders as they engage in decisions about the uses of AI to be allowed and encouraged in their schools:

- ***Consider both "sinking the boat" and "missing the boat" risks of using AI in schools***: K-12 leaders need to identify and weigh not just "sinking the boat" risks related to AI - that is, the possible negative consequences that could come from allowing uses of AI by teachers, staff and/or students - but also "missing the boat" risks - that is, the possible learning and time-saving benefits that would be missed when NOT allowing students and staff to use AI. This is particularly important when considering that schools' decision to block student access to AI tools may contribute to exacerbating the existing digital divide, as it will put students without good Internet services and/or computing devices at home at a disadvantage compared to students who can access AI at home - especially with respect to their preparation to enter the workforce, and missed opportunities to personalize their learning.
- ***Keep in mind the distinction between uses of AI as "assistant" versus "replacement"***: When evaluating specific AI tools, it is important to explore and consider how each could be used to assist and enhance student and staff work, rather than "replace" it, as human control of AI-generated output may help maximize benefits while also reducing the inevitable risks of

specific uses of AI. This will also be an important distinction to convey to teachers and students, to guide *their* optimal use of AI for specific applications.

- ***See challenges presented by AI as opportunities to re-examine current practices in K-12 schools:*** K-12 leaders can leverage the potential of AI to disrupt current assessment and teaching practices as the catalyst to engage their school community in questioning the effectiveness of how they support and measure student learning, and exploring AI-enabled alternatives that may enable teachers to focus more on student learning and individualized instruction, resulting in better learning opportunities for students.
- ***Invest in high-quality professional development for all stakeholders:*** Investments in teacher and staff professional learning about AI will be needed in order to realize several of the identified potential benefits while managing related risks, especially with respect to personalized learning and inclusive education. Consider in particular the value of engaging K-12 teachers and staff in using GenAI to support their own work as a way to gain insights about AI potential risks and benefits, which can in turn lead to more informed decisions about future uses of AI in schools.
- ***Develop a shared expectation that decisions made about AI will need to continue to evolve along with advances in this technology****:* The many unknown and rapid changes in AI call for setting expectations, with all constituencies, that any decision about uses of AI in schools are subject to change and will require on-going review and modifications, along with monitoring, experimentation, and professional learning. This in turn suggests the value of issuing "guidelines" rather than "policies" that may be more difficult to change.

Before sharing our recommendations for how other entities could support K-12 leaders' decision-making about AI uses, we want to report what K-12 leaders themselves identified as priorities to help them deal with AI in their schools:

- Receiving guidance from the state education department as well as experts – so as to inform their decisions about AI.
- Providing all stakeholders with high-quality professional learning opportunities as well as time to explore AI - so as to reduce resistance and increase ethical and effective uses of available AI tools.
- Empowering teachers and staff to capitalize on AI to support their everyday work – so that some of their time could be freed up for more important functions and, thus gain their informed buy-in to considering possible applications of AI in K-12 education.
- Having better technology solutions to ensure the successful use of AI by all constituencies.

(See the article "An AI wishlist from school leaders", for more details and quotes from interviews regarding the above points)

Informed by these priorities as well as the other insights gained from our interview and survey data, here are our recommendations for:

- ***State education departments****:* As K-12 leaders in many states are waiting for guidance from their state education department about uses of AI (so they do not have to redo their policies if inconsistent), it would be helpful to provide this information as soon as possible - with the caveat that any policy or guidance is subject to change.
- ***Professional organizations/experts****:* As K-12 leaders are also looking to trusted experts to guide their decision-making about AI, it would be valuable for them to have resources they can refer to for information and recommendations. To be most accessible and useful, these resources should be available for free, be accessible online, be continuously updated, and

take into consideration the very limited time most K-12 leaders - but especially principals and superintendents - have to learn about AI and its applications to K-12 education.

- ***Educators involved in K-12 leadership professional development and/or preparation****:* Given the recognized need for high-quality professional development about AI for a variety of constituencies, it is also important to quickly develop a cadre of educators that can provide such offerings. These offerings should be carefully designed for specific audiences, so as to best serve their different needs, and provided using multiple modalities so as to make the best use of available time and learning preferences.
- ***Communities/the public****:* The public will also benefit from professional learning opportunities surrounding AI; and more specifically regarding AI's potential benefits and risks, so they can come to appreciate the complexity involved in K-12 decision-making about AI and the need for on-going revisions.

Conclusions

We hope that the considerations shared in this white paper will help both K-12 leaders and other educators better appreciate the complexity involved in making decisions about using AI in K-12 schools, and also suggest some concrete actions different players could take to lead to the best possible decisions moving forward.

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