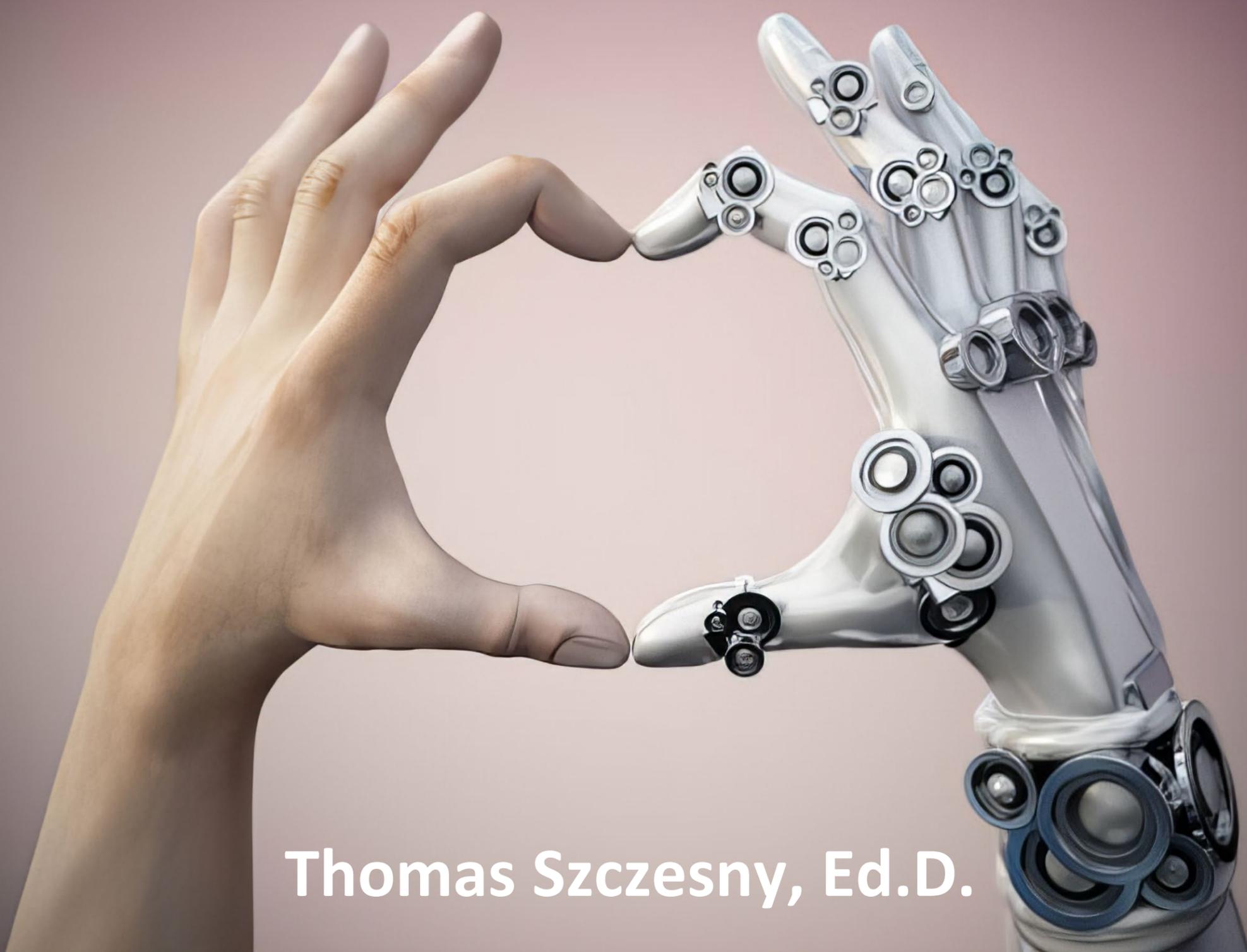


**WINTER 2026**

# **LEGACY**

**TRANSFORMATION IN ACTION**

**Humans in the Loop of Learning  
in the Age of AI**



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**The Worthy Educator**

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## Humans in the Loop of Learning in the Age of AI



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People flourish when afforded space to be present with and act in the service of others. We all – young or old – are energized from knowing our presence is significant to those around us and knowing how that presence contributes to the broader community (Prilleltensky, 2020). Presence matters, but conversations today about large language learning models (LLMs) and Artificial Intelligence (AI) often focus on absence instead – taking humans out of the loop – creating efficiencies. The notion doesn't take into account what we know to be true about education: connection is foundational. To thrive, we require direct interaction with others. Relationships are the beating heart of education, not software and servers.

Teaching and learning is a relational endeavor, and research affirms this sense of belonging as foundational for academic growth (TNTP, 2024). As educators, it's dismaying to encounter assertions that technology can replace our presence. Some even go so far as to assert computers can offer instruction tantamount to a teacher's delivery. This article argues against to the contrary, advocating in favor of human-centered teaching and learning. Even more importantly, I make the case for professional learning that incorporates AI and LLMs to help design learning experiences with human connection at their core, and it begins with connection and mattering as central to joyful learning. The challenge and the opportunity is building learning environments where human interaction, not computer interface, is the focal point.

To address the topic of LLMs and AI in education, we must first acknowledge the reality that they are present in the lives of our students, who are raised in a world where technology's capabilities define how they experience the world around them, how they interact with each other, and how they learn and create. We must choose to view this reality as an opportunity to help our students understand how to responsibly, ethically engage with these new technologies.

Historically, the emergence of new technology stokes fears about its implications for human connection, cognition, and interaction, but over time, we witness its lasting imprint and we find our agency through it. Its utility depends on how we choose to use it. The evolution of human interaction with technology is a story of co-creation. As educators, we can be the change agents who help students to be ethical, constructive users of the new tools they take to so easily.

Today's educators face both enormous challenges and enormous opportunities as champions for human interaction - relationships and connection - education's central, guiding value. In this moment in human history we can solidify the foundation to which we commit ourselves by advocating for the value humans still contribute in the workplace and in society, and by demonstrating how everyone flourishes when they know that they are valued. We must shape learning environments that are deeply human to empower learner agency as a requirement for teaching and learning today, *and* ensure that these learning environments safely and securely incorporate LLMs and AI. In doing so, we inform a new age of student learning, professional learning and community engagement; a human-centric path forward that champions people and how they think about and make use of technology.



## Advocating for Human-Centered Education

A leader's responsibility includes walking those they serve through transition. Bridges (2009) explains transition as a series of 4 phases. Across each phase, it's critical to keep in mind that transition involves loss. This is a particularly relevant frame for leaders to remember in conversations about AI and LLMs, because the potential for loss can be profound for those having change thrust upon them. Relationships are foundational in conversations about AI, as we share and address the fears that we can be replaced - or our skill and passion can be replicated - through new generative technologies. It can feel as though it is threatening our very identity.

The reality is, with all the excitement and speculation about the impact of these new kinds of technologies, we can be energized to respond proactively. Rather than dehumanizing classrooms and workplaces, this current era gives us the chance to re-emphasizing each person's unique identity and essential value. It's important to acknowledge these anxious feelings we have and honor each voice as a first step to coming together and advocate for those values and principles that are core to meaningful learning, working and living. This refortifies our value for human-centered education by keeping us very much in the loop - a motivating factor in our own agency as education professionals.

While keeping humans in the loop is obvious to anyone in education, it's important to recognize our audience goes beyond our profession. By engaging the broader community, we educate, inform, and prompt deeper discussion about the role of schools and technology in society. We must espouse a compelling vision that presents a new model for education that is best for our today's students. There are several germane points to be made in advocating for human-centered learning in this age of techno-infusion in every aspect of our lives.

## The Power & Purpose of Education

Consider these key points in making the case for the power and purpose of public education. It's not an exhaustive list. Rather, these are starting points to prime deeper thinking about the human role in optimizing generative technologies and the critical role of educators in this moment in time. These points illuminate several through-lines as to why and how humans remain intimately in the loop when it comes to new technologies in teaching, learning and our everyday lives.

### – Education and Democracy

In a pluralistic society, it's imperative we relate to each other; to listen, engage, and respond as people. Those skills are learned through direct human interaction, and the classroom and school yard cultivate these abilities to have healthy, constructive exchanges throughout our lives (Dewey, 1916). The need for institutions that foster these skills is growing in importance as polarization increases across the globe and the challenges we face only intensify. It's easier now to construct and remain in a personal echo chamber that reinforces our own views without considering others. Balkanization does not promote peace, understanding, or harmony. A willingness to engage, seek perspective, and find common ground is key to listening, negotiation and compromise - skills that our formative years in schools help us to develop.

### – Teaching and Learning Best Practices

Students learn best through the act of constructing knowledge. Construction itself is a collaborative effort through which everyone participating benefits from the exchange of ideas. These skills build upon each other through authentic learning experiences with others (Dehaene, 2021).

### – Raising Good Humans

Often, I hear parents say what they want most for their child is to develop as a good human, and while we can hold different views about what constitutes being a good human, we can agree on core characteristics and attributes, such as kindness and empathy. Cultivating these qualities requires human interaction in nurturing learning environments to create the context for growth and development.

### – Durable or Human Schools

We can also approach our advocacy work in terms of economy and efficiency, explaining how young people need the skills of teamwork, communication, and collaboration to thrive in the twenty-first century workplace and in society. In addition, flexibility, creativity, and problem-solving are essential skills humans bring to learning and productivity that cannot be supplanted by technology, and schools are well-equipped for cultivating these attributes and adapting and evolving to accommodate new skills and dispositions as they become evident..



### Only Humans can Close the Loop: Human Skills

Ethics are one through-line for all potential points of advocacy. Engagement with democracy, the notion of raising good humans, and the development of durable skills all implicitly assert the importance of fostering direct human interaction in our classrooms. There's no agenda in making this statement, nor a clear goal about what needs to constitute "right." Robust debate about ethics has existed for centuries and will continue. The very debate itself revolves around different conceptions of the same principle, and young people benefit from exercising their values and beliefs with one another in supportive environments.

One essential skill, for example, is critical thinking. It requires the ability to analyze potential bias in the data that is presented, and LLMs are built from data that can contain bias. The information from AI models built on those LLMs must be considered in this context. It isn't an indictment of AI to question the validity of what is produced. AI itself is incapable of that self-reflection. As educators we can help students see the potential for skewed results and bias. AI models have the goal of satisfying human wishes; to say what we want to hear. A user is naturally inclined to see the results in a positive light, receiving an answer they want to hear over a better response that better serves them, creating that echo chamber effect.

Examples like this insert ethical considerations into helping young people understand AI. Philosophers have long debated whether and how to optimize our lives for joy and fulfillment, yet technology that makes optimization easier, or a sense of righteousness easier to attain, does not always lead to deeper fulfillment. It's a profound question, striking at the core of what it means to be human in this age of digitized, generative being. Classrooms are the bastion for these deep reflections and even deeper discussions.

*Only humans can close the loop.*

### Only Humans can Close the Loop: Teaching and Learning

We stand as advocates for relational teaching and learning, cultivating the abilities, mindsets, and dispositions that support students in growing into ethical, humane adults - good humans. Caring professionals can thoughtfully design interactions that help children grow as kind, collaborative problem-solvers. In this way, we are agents of creation, utilizing our knowledge of teaching and learning to make these outcomes possible.

Educators are central in learning models that emphasize relational experiences in the development of human skills. We recognize when students feel unsure or uncomfortable and offer re-assurance, modeling empathy and understanding. The relationships we cultivate over time help us know the contrast of expression that prompts a check-in. Similarly, educators come to know their students in ways that enable them to choose texts or questions that ignite their curiosity. In the moment, we set the conditions for dialogue that enriches learning and promotes personal growth. In these ways, educators serve as a catalyst, creating interactions that fuel our growth as humans. Instead of filling the pail, as the saying goes, educators spark and tend to the fire, gathering the material, igniting it, and carefully tending to it in order to keep it burning.



### **Only Humans can Close the Loop: The Importance of Mattering**

AI and LLMs cannot skillfully navigate the human experience of learning. Only we are capable of setting the norms for interaction, noticing the rhythms of dialogue, affirming positive change, and assuring a sense of safety wherein students can make themselves vulnerable enough to learn and grow and thrive.

AI cannot replicate the care of an educator. We know that people learn when they are genuinely cared for, and only a fellow human can be that warm presence. We show this in a myriad ways that they recognize, appreciate, and value another person's presence so that students know they matter. This is the first step to inspiring agency both in students and in colleagues. Our presence and involvement in the lives of learners makes all of this possible, with or without technology, and today technology is ever-present.

Human skills are best cultivated in environments where students have agency over their learning. Collaboration, compromise and problem-solving empower students as creators. They own the process as they make contributions, which is essential for students to know they matter.

**If we can get stakeholders to agree that we don't want to deprive our young people of agency, then we can agree we need to keep humans – educators and students - in the loop.**

**If we can agree that we want our young people to know how to interact with others, then we can agree we need to keep humans – educators and students – in the loop.**

**If we can agree we need to maintain vibrant classrooms, then we can agree we need to keep humans – educators and students – in the loop.**

Students must be invited into the loop in order to invite their meaningful participation. When it comes to technology, the same questions posed here can be posed to young people. Namely, how can we use emergent technologies as tools while maintaining our connection to each other? They strike the core of who we are as humans, and educators can insert the ethical considerations so important in framing the learning in this new age. We provide students agency, asking them to consider and create conditions for living in their world. The reality is we all adapt and reach a better place for grappling with the deeper questions we face.



### **Only Humans can Close the Loop: Incorporating AI**

We can re-ground what it means to be an educator in the age of AI. A shared desire for relational models of learning that center human connection should become the guiding lights. They guide toward keeping educators as essential in the loop of learning while engaging with AI and LLMs strictly as tools within a larger context of genuine interaction. The approach affirms the value of educators while offering a path forward for their place in the loop. It begins with noticing that the learning experience itself must be human-centered. It must center student agency and the concept of mattering. From that place, AI can offer ideas that put parameters on that experience – the task around which it is centered – but technology's limitation includes the fact realization of that task cannot be accomplished in a manner that promotes the development of human skills as an outcome.

The pressing challenge for leaders is how to help educators see AI and LLMs as tools for creating learning experiences that empower students, affirm their value as people, and provide them agency. Too often, AI for educators is portrayed as a useful mechanism for gaining efficiency, such as automating email. This is true, too, but its real value lies in what it affords us in planning and preparing for growth and success. In leading the transition, we frame the professional learning space much the same way we define new learning environments for students.

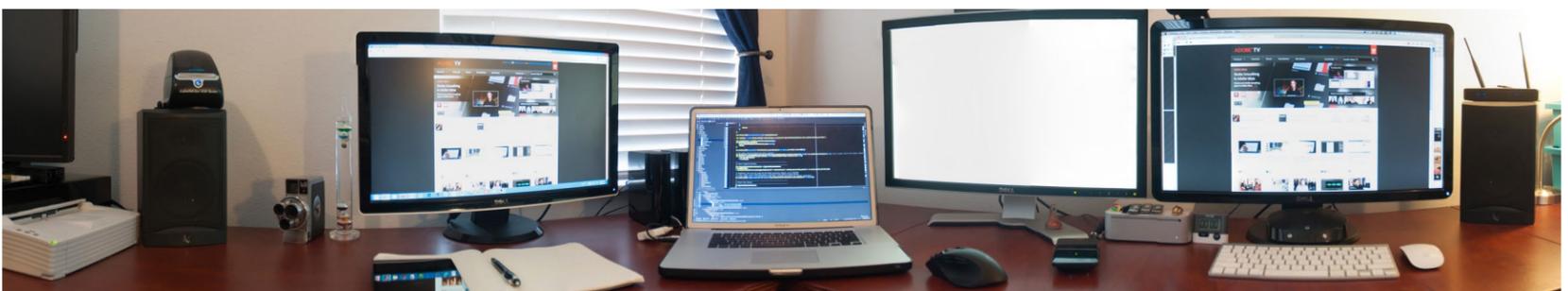


### Only Humans Can Close the Loop: Leading Forward

The way this works in our district, our Instructional Technology team met with instructional leaders so we could listen and learn about the tools available. We then filtered the tools that were appropriate and relevant for our teachers. From there, we met with each grade team PLC to introduce tools and provide space to play and learn before committing to using technology they found most helpful. A few weeks later that same team from the Instructional Technology team returned to lead training for the whole staff. Before that, we met with the Instructional Technology team to share what we observed in PLC and how staff responded to the tools to shape the professional learning they delivered. Afterwards, a designated instructional technology teacher leader met with each team to design upcoming units using these new AI tools. At my suggestion, they created a choice board to guide collaboration – yes, using AI.

The whole sequence is intended to acclimate staff to AI in a gradual, accessible manner. The core team of instructional leaders will serve as lead learners, but everyone on staff learns certain tools to establish a baseline so there is a common language for our professional learning, which is a best practice for navigating technological change (Leonardi & Neeley, 2022). Discretion is key for setting that baseline of available tools, which is why we've had a lead group act as filters and plan for engaging the full staff. It allows us to establish a baseline of knowledge around a standard set of tools based on our guiding principles. In other words, we use AI for curating resources that allow for more student discourse and exchange, even if and especially at the expense of other tools with less utility for that purpose. This is discretion in action.

Your tools should be chosen based on the principles you hope to make the point of emphasis in the classroom, flowing from the environment you're seeking to cultivate. Use frameworks that elevate similar principles, to assess whether a given resource lends itself to the development of human learning. The [University of Pennsylvania Graduate School of Education's Core Practices for Project Based Learning](#) and [Stanford's YELL \(Youth Engaged in Leadership and Learning\) curriculum](#) are two options. As frameworks, they prompt students with open-ended questions, present them with meaningful issues and challenges, and include scaffolding to support novel solutions to challenges. Consider how AI can augment the development of learning aligned to these experiences.



AI can be trained to generate prompts, brainstorm ideas, and create tasks fostering classroom interaction. Rather than relying on a single educator to generate those ideas, the technology can be a tool for thought partnership in designing interactive learning experiences that promote the development of human skills. They can also help design empowering, humanizing learning experiences. Educators themselves must be present to execute those plans. The support of teachers helps to create buy-in and emphasize the pedagogical principles of delivery around discourse and debate that are embraced in your district.

At the point of either observing classroom discussion or engaging in a feedback conversation with a teacher, people are dialoguing in loop and sync. It's planning comes from Skinner (1954) and its execution comes from Dewey. Familiar to generations of educators, it is an example of something educators may fear losing in this age of generative AI. The notion of training through feedback with direct stimulus and response may train AI to deliver the resources an educator can use to foster debate and construction of knowledge amongst students, but it's not a productive model for actually fostering such interaction.

It's important to establish where this type of learning lives. The structure of your district may involve different departments in different ways. It may also have variable degrees of collaboration. I raise the complexity of organizational dynamics as a barrier only to name a potential challenge as you scaffold support for yourself and your building.

### **Only Humans Can Close the Loop: Designing for both/and in the Age of AI**

Another step we're taking to engage on the topic of AI is addressing the role of technology in our students' lives through our formal structure for community engagement, our School Advisory Council (SAC). The school's SAC advises on a range of issues. Some are codified, such as the school's budget, but the other topics are chosen through a collaborative process. This year we opened a broad umbrella to cover the topic of technology and its role in the lives of young people. We surveyed families to narrow the scope of this broad topic, asking them which tools and technologies they want to understand better and how it can support learning at home. Privacy and safety emerged as top of mind, which points toward the concerns families have about the technology. It also points toward the fact families hope young people develop skills for being judicious in how they use technology; a further affirmation of a human-centered form of education.

It's an unavoidable truth: technology plays a prominent role in our students' lives. Like with educators, we need to equip families to help their young people develop healthy, ethical habits in their use. Screen time, for instance, dominates many conversations about tech use at home. There is fear around the appropriate amount of time online, and if and when to extend that time, offering yet another opportunity to center relational work and outcomes for children.

Conversations with families about technology and AI, in particular, can become opportunities to affirm the importance of developing relationship skills. It also underscores why educators will continue to play such a prominent role in the age of AI. It is a complex moment in time when collaboration is necessary. Now more than ever, it is what is required to thoughtfully build our dialogue loop.



I value equity, collaboration, connection, and joy. As a person and leader, I seek to expand the capacity of others to connect, love, lead and impact. I lead in service of cultivating environments of belonging where everyone knows they matter in order to inspire the collective growth of the community and support individuals to realize their highest potential. I also love to learn because it allows me to be more effective in how I serve others, starting with how I myself can improve. It helps me realize not only how much room I have to grow but also the awesome responsibility of taking that personal journey in order to serve others to seek those same horizons.

It's an awesome endeavor, and I bring extensive experience in strategic leadership, innovation, change management, professional learning, and public communication. I also bring particular expertise in systems-thinking, organizational culture, adult and youth development, project-based learning, and durable skills. I developed the insights in this article working in and collaborating across a range of sectors, including in K-12 education, higher education, and non-profit organizations, and for-profit institutions.

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