

Technology's Impact on Learning

Atlanta Public Schools, Arizona State University, Zoom + Steelcase share their digital transformation journey.

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Education is adapting to technology in ways never before imagined. The digital transformation of learning that's underway is influencing teachers and students at every level, challenging everyone to better understand its effects on learning, skill development and wellbeing, while also pressuring learning spaces to do more.

Experts in education and technology from Atlanta Public Schools, Arizona State University, Zoom and Steelcase recently joined a webinar discussion of the challenges, opportunities and solutions that are rapidly emerging as space, technology and pedagogies intersect in new ways ([watch it now on demand](#)).

Participants:

- Stephanie Pierotti, Director, ShapingEDU, Arizona State University
- Dr. Aleigha Henderson-Rosser, Assistant Superintendent for Instruction Technology, Atlanta Public Schools
- Pat La Morte, Global Education Lead, Zoom
- Andrew Kim, Education Researcher, Steelcase
- Katie Pace, Steelcase Communications Director & Host

Katie Pace: How would you describe the digital transformation of learning?

Aleigha Henderson-Rosser: Here in Atlanta public schools, I think it includes not asking our K-12 kids to power down when they get to school or engage in the process of learning. In every other aspect of their lives, they're powered up. So, I think that is one of the ways that we start working through digital transformation.

Stephanie Pierotti: A goal of ShapingEDU is that we want to help lifelong learners thrive in the digital age. So that is really focusing on meeting digital learners, lifelong learners and global learners where they are, both physically and with their expectations of engagement in a learning environment, be it physical or virtual.

Pat La Morte: Digital transformation is learning that starts with listening to how students want to learn. I think the digital solutions we are looking for are within the intersection of human behavior, technology and space. How can the digital solutions that we choose to adopt and deploy help drive learning forward, first and foremost? By the way, this will look different for each school, perhaps even each classroom.

Andrew Kim: I think there are a lot of benefits of digital transformation when it comes to scale and efficiency, but I get most excited when the learning experiences are redefined or transformed. And so, when I think about inverted pedagogies that shift lectures outside of class sessions or active learning kinds of hybrid class experiences, that's truly exciting to me. As these models redefine learning experiences, a new value is attached to space. Space now has to work harder, and it's exciting to see how technology and space can come together hand in hand to deliver and support these new learning experiences.

KP: We've all seen studies about how people felt more disconnected during the last several years as more of our interactions have shifted online. How can educators use technology to build connections?

AH-R: I do believe that there is a lot of connection that can be built through technology, but the approach really has to be a balance. We have a focus on social and emotional learning, and here in Atlanta public schools we wanted to understand where our students are in that regard as they returned to our schools from pandemic learning. We've used a behavior/emotional screener to figure out what they're struggling with. We've also adopted personalized learning — a "one size fits one," whole-child approach. We really want to meet students where they are — emotionally, academically and also engage their interests.

AK: In the built environment, however, the technology has such a strong center of gravity that it's easy for students to get distracted at times. Mobile devices or displays in the room can be physical barriers between students and educators. It's key to think about when you want to use technology and when you don't, and then how you can get technology out of the way when needed to allow people to connect with other humans, to be able to see one another and interact with one another.

KP: Stephanie and Pat, you recently hosted a ribbon cutting for a new Zoom Innovation Lab at Arizona State. Why and how did you create it?

SP: One of the interesting challenges with this space is that we were retrofitting. It wasn't new construction, so we didn't have the benefit of planning a new space to accommodate our needs. We had to find an existing space, work with what we had and use the amazing technology of our partners and the insight of Zoom to make it as useful and efficient as possible.

PLM: We started with our end goal by asking: Why would students want to come here and how do they want to interact with each other? So, we gave the space enough structure to boost creativity, collaboration and communication, but not too much structure so it would be pigeonholed with students thinking, "Oh, I only go here for this." We want the space itself to build its own digital timeline of how it gets used, which will then inform everybody involved on how it evolves.

I think digital transformation starts with what I call a "rock what you got" mentality. See what space or spaces you have, and then ask what you need to add to make that space work in different ways.

KP: Aleigha, tell us about how technology is affecting your K-12 classrooms in Atlanta.

AH-R: The challenges are different for K-12 compared to higher ed. Our teachers are held to meeting certain academic standards, and that's how they enter the classroom and how they leave it every day. So, when you're thinking about personalized learning, you need to have a flexible path to get to a certain level of academic proficiency for each kid. And you also need technology products that are flexible enough to allow students to incorporate their talents, their interests and their creativity. The physical space really needs to rise up to meet the students in that personalized learning environment.

KP: How are you approaching wellbeing when it comes to planning for digital transformation and the physical environment?

SP: First have to look at expectations for engagement. Engagement is critical to mental health. And the fact that 85% of teenagers play at least one video game every day can tell us something about what kind of engagement level they are expecting when they go into a classroom. How does that change what we teach, how we teach, how we engage, and how we give feedback? I think all of those things directly affect the mental health and wellbeing of the students because they want that engagement, they want that constant feedback. And if they don't get it, they're going to disengage. So, knowing the expectation level is really important, and taking a human-centered approach to how we engage and educate is critical.

AH-R: When you're really educating the whole child, you're meeting all of their needs in that one classroom. And if you're focused on equity, it requires you to deeply understand the student and provide the right support and increase flexibility through instructional models that help them demonstrate mastery in different ways. Future-ready spaces are designed to empower that kind of agency and active learning instead of demanding compliance or passive learning experiences.

KP: Technology is changing so fast. What's your advice for educators? What should they consider?

PLM: For starters, forget comparisons to what other schools are doing. Keep in mind the learning goals that match your curriculum and where you want your students to aspire. To me, immersive learning bridges over to inclusivity and equity in learning as well — making sure all students have access to the same materials and the same experiences no matter where they are.

One of the biggest topics in higher ed right now is high-flex learning — what does that look like and what are your goals there?

Esports is another big one. I see esports labs popping up in schools from all levels of cultural diversity and money because they're looking at it as an opportunity for tying the sciences and math to those curriculums, giving students an avenue to go forward.

Another thing that's really interesting to me is AI, and it's in two forms. It's AI in workflow and efficiencies in the business of education. But it's also human-in-the-loop AI for the classroom, meaning not removing the teacher but ways we could employ AI programming to help students feel like they're being served more on a one-to-one basis when the teacher has more than 100 students to attend to each day.

Another thing I'm seeing is "my time, anytime" training, and I'm not just talking about students. I'm talking about teachers. We can't expect this shift to happen if we don't have a solid teacher training program and make them champions of learning. And that happens, especially at the K12 level, through the use of exemplars more than top-down mandates.

Overall, I'd suggest just starting where you're at and don't overthink the end goal. Just start moving forward. You might find things that you weren't thinking about will pop up that actually guide you in a different direction.

AH-R: Another example is The Propel Center, the first virtual historically black college and university. It's here in Atlanta. There's a physical space, but any HBCU student across the United States can take a class there and be taught by Apple innovators and different technology leaders. I'm loving the idea of the walls coming down and every space becoming conducive for learning across the country and across the world.

KP: Andrew, what can you tell us about the research and prototyping your team at Steelcase has been doing? What are you learning about digital transformation?

AK: There are several areas under this umbrella of digital transformation of learning that we've looking closely at — specifically hybrid learning, gaming and immersive experiences — and we're looking at these across K-12 and higher ed as well as in corporate learning.

In hybrid and the high-flex models that we're seeing, there's a concept we've labeled the three E's. First, ease: Is it simple for the educator and students to use the technology? Is there a kind of one-button start to the session? Next, equity: How might you address presence disparity and allow for a more equal presence whether you're in the room or you're remote? Finally, engagement: How can you allow for more natural types of interactions? How might you braid the physical and digital? Or, to use one of my favorite phrases, pixels and the pencils?

The second area that we're looking at is esports, specifically thinking about gamer performance, wellbeing as well as collaboration. So, when it comes to performance, is the work surface of ample size? Is the chair adjustable enough to provide the kind of support that gamers need, which also relates to their wellbeing? We know that there's a lot of cognitive stress when performing at a high level, and so is there an adjacent decompression space that supports wellbeing, or are there adjacent spaces that provide connection and collaboration?

The final area that we're looking at is immersive learning and what that means for students and educators. We're really excited about what these types of technologies will bring in terms of empathy, storytelling, and other types of learning experiences. In our prototype, we've been looking at things like safety, social learning and the fluidity of the space. Is it safe for students to be in the headset? Can the carpet texture and height help with that? And are there shared displays so that individuals who are not in the headset can also participate in some fashion? And, since sometimes these activities last maybe only 10 to 20 minutes, how can the space support other learning activities?

KP: If there is just one takeaway from what we've covered today, what would that be?

AH-R: You can't do this work in isolation. It has to be not just a great vendor but a great partner along the way. And involve the people in your system. I know for APS, we had to make sure that we worked with our facilities department to talk about what we wanted to see happen. We brought the research to our senior leaders. We educated our teachers in the research around engaging learning environments. You have to create champions throughout your district. You can't be the only person in the room that is focused on these flexible spaces. You can't do this work in isolation. But if you create your champions inside your district and with your partners and your stakeholders, I think the work will move pretty fast.

SP: I think it's really key to be willing to explore what's on the horizon and embrace that. Looking for signals of change and being prepared for what's around the corner is critical. And finding the right partners and creating collaboration opportunities outside of whatever silo you may exist in — finding other people that want to work together and learn together, and then making opportunities for that to happen.

PLM: My takeaway is that as we moved away from the initial onset of Covid, that's when we all really shifted and realized what could be done. I think it gave a permission slip for the acceleration of roadmaps for tech companies. Because now teachers are asking, what else can you do for me? So, I would urge you not to recreate, but take a chance to reimagine. Reimagine what the outcome of whatever you're trying to do needs to be — whether it's a lesson plan, a graduation event, a robotics competition or whatever — reimagine what that could be and then just take the step. Nothing we did before was perfect. So, nothing we're going to do next has to be perfect either, right?

AK: The takeaway I would share is to embrace humans first to get to a human-centric approach. Think about your pedagogical goals, first and foremost, and what you want to promote – rather than taking a technology-centric approach and having technology dictate those things. And I think behaviors over time lead to a new, different kind of culture, as well.

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WEBINAR POLL RESULTS

Nearly 150 members of our live webinar audience weighed in on the following poll questions.

What level of impact is digital transformation having on teaching and learning experiences within your school or organization?

4% No impact

2% Little impact

22% Moderate impact

66% Significant impact

6% Transformative impact

What is the biggest opportunity from successfully integrating technology and learning spaces?

- 34%** Creating a more inclusive and equitable learning environment
- 31%** Allowing for a more collaborative learning experience
- 15%** Enhanced efficiencies due to technology and tools
- 10%** Fostering deeper learning
- 10%** Greater potential reach for institutions or organizations
- 1%** Other

What is the biggest challenge with integrating technology and learning spaces?

- 34%** Instructor adoption and training
- 30%** Increased cost
- 13%** Technology integration and future proofing
- 12%** Disparity between in-person and remote participants
- 10%** Knowing the best types of activities to engage learners
- 2%** Wellbeing of students

What technology-enabled experiences are you beginning to explore at your school, college or university?

- 63%** Hybrid Learning
- 15%** Immersive Learning (VR/AR/XR)
- 15%** Gaming + Esports
- 5%** Other
- 2%** AI-enabled Adaptive Learning

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