FUJITSU

Thought Leadership
The Future Role of IT in K-12 Education

In a rapidly changing global economy, educators are being tasked with preparing students for a world in which many of their future jobs either do not yet exist or will change in fundamental ways not yet understood. To cope with this, students need more dynamic, adaptive and personalized education experiences to help develop their core competencies and enable them to become more flexible adults, confident and ready to thrive in this environment.

Our current system of common structure and standards is itself the result of innovation. Now we see K-12 education undergoing a seismic shift away from institutionalized thinking and toward a more student-centric approach. Teaching is becoming more facilitative, while learning is less about consuming facts and more about how to engage and use information.

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What does student-centric learning mean?

Student-centric learning is a term we at Fujitsu use to represent this paradigm shift. It is about placing each individual student's needs at the core of their academic experience. As part of this shift, digital transformation (DX) concepts that have already revolutionized other industries will undoubtedly impact education—reforming learning delivery and linking teachers, students and parents together—and challenging traditional concepts of what constitutes a classroom, or even a school.

Traditionally, personalizing instruction and content delivery to appeal to individual learning styles was a model mostly reserved for a minority of students with unique needs. To be able to provide individualized learning for all, educators will need technologies that allow them to support each student individually while still managing the same class sizes. In addition, enabling a more personalized approach—a "mass customization" of sorts—will require teachers and parents to partner with students to form a supportive triangle that fosters the student's overall academic success and prepares them to be lifelong learners. This is no easy feat.

Students will have more choices in K-12 education as teachers better understand their individual needs and can access the resources to meet them. Online learning, collaboration technology and access to a broader range of content will come through DX initiatives, enabling those choices. Changes in delivery in higher education have led the way, but these capabilities will need to be cheaper and easier to use to realistically be accessible to K-12 schools that are not as well funded.

What has COVID-19 taught us about the future of K-12 education?

In many ways, COVID-19 is to education what 2008 was to financial services. It's a wake-up call.

As the global pandemic shut down schools across states and provinces, districts scrambled to virtually replicate physical learning environments for their students sequestered at home. The two distinct worlds of online learning and classroom learning—previously kept mostly separate—suddenly became intertwined. The impact was instant, but at time of writing, the outcomes are unknown.

Let's look at what happened. First, having everyone suddenly forced into distance learning raised immediate concerns about equality. How could schools make sure each student had access to the resources needed—devices, applications and internet—to support their learning? We already know that the relative wealth of their parents is the largest determinant of student success. What if distance learning further exasperates the inequalities of privilege and opportunity?

Second, COVID-19 exposed the level of preparedness at different education institutions. Did they have the technology and know-how? Were staff ready? What about lesson planning? Even basic issues, such as protection of private information and security—were these accounted for? Deficiencies were uncovered, yes, but overall it showed the tremendous resilience and innovative spirit inherent in educators. Teachers just found a way to make it work. As a parent myself, I was impressed. This forced experiment proved that the vast majority of educators are far more adaptable and willing to change than they are often given credit for. But it also showed they desperately need strong organizational and technical support.

From a more strategic perspective, COVID-19 also challenged the very role of the teacher and how they effectively deliver education to students remotely. This underscored some thinking already well in motion—that online learning materials alone are not enough. Students still need teachers to motivate and facilitate so they can interpret and apply their new knowledge effectively.

Overall, the benefits of new digital capabilities in K-12, made possible by cloud technology, were amplified and accelerated by the urgency of the COVID-19 crisis. Will we revert back? I doubt it. This event has been a catalyst that showed it is neither just classroom nor online learning we need, but a hybrid of both. It is unlikely that K-12 education in North America will ever be the same again.

What role can technology play?

It's clear the teacher still largely defines the learning experience. So what's the role for technology?

IT in education can be split in two parts. Classroom technology that students interact with directly–robots, tablets, smartboards–is what most people think of when they think of technology in education (so-called EdTech). But often underestimated are the middle and back-end systems that help define student journeys, manage schools and run the school district. The student information system (SIS) is the system of record that carries a child through their entire K-12 career. Parent/family portals link back to the SIS, which also integrates with special education, resourcing, HR, payroll, transport management and myriad other systems required to run a complex education environment. Traditionally, these systems have been siloed and disparate. Using cloud technologies–such as Microsoft's Azure, Dynamics and Office365/Teams–allows silos to be more easily synchronized to work in harmony, while also allowing for much faster adoption of new capabilities.

In a DX context, data is the ubiquitous fuel educators and administrators need as valuable knowledge resources to help improve student outcomes, even while information is kept secure and private. This is where Fujitsu is focusing its efforts and can add real value to district operations.

At the end of the day, technology tools, whether hardware or software, are just that: tools. Technology is only ever as good as the people, processes and policies that enable it. Real change and innovation will come from teachers, both in the classroom and online. All they need is access to the opportunity that a well-thought-through technology strategy can provide.

Student Information System as a Service

The Fujitsu Student Information Service is deployed on Microsoft's Azure cloud, creating a powerful ecosystem for school districts embarking on student-centric, digital transformation initiatives.

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