The future of education will be "hybrid first," enabling flexibility and choice in how, when, and where faculty teach, staff work, and students learn.

Reimagining the Future of Education: Flexibility Is Key for Teaching and Learning

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Introduction

The education sector has been forever changed by the impact of COVID-19. Technology has redefined and reimagined how and where students learn, how and where teachers teach, and how and where institutions conduct day-to-day operations. Elementary and secondary schools as well as colleges and universities operate in an increasingly digital. Digital capabilities and hybrid teaching and learning tools will increasingly become permanent fixtures of our global education systems.

The years ahead in education will be defined by these digital changes, particularly as greater flexibility and choice are demanded by teachers in how they teach and by students in how they learn. In 2022, institutions will continue to address pandemic-era technical debt to enable hybrid-first learning and operations, where institutions work to establish a hybrid experience infrastructure that enables administrators, teachers, and students to shift seamlessly between physical and digital services and operating models. This will require not only investment in new technologies but also organizational and pedagogical changes to long-standing processes and academic norms.

School buildings and university campuses will not disappear — they hold fundamental roles as community and social centers. However, what we consider essential onsite interactions and services today will fundamentally change as student expectations evolve and technology features and functionality advance.

Education is not expected to return to the way things were before the pandemic. For education, physical and digital workspaces will be permanently changed and will continue to evolve into hybrid modalities (see Figure 1).

AT A GLANCE

KEY STATS

» By 2024, 40% of institutions will adopt a hybrid-first approach to operations and service delivery, driven by high-demand for flexible learning options among students/lifelong learners.

» One-third of educators believe remote and hybrid work models will be an embedded part of accepted workplace practices moving forward.

» The top 3 technology investments for education in 2022 are cloud-enabled knowledge management, team collaboration software, and content sharing and collaboration tools.
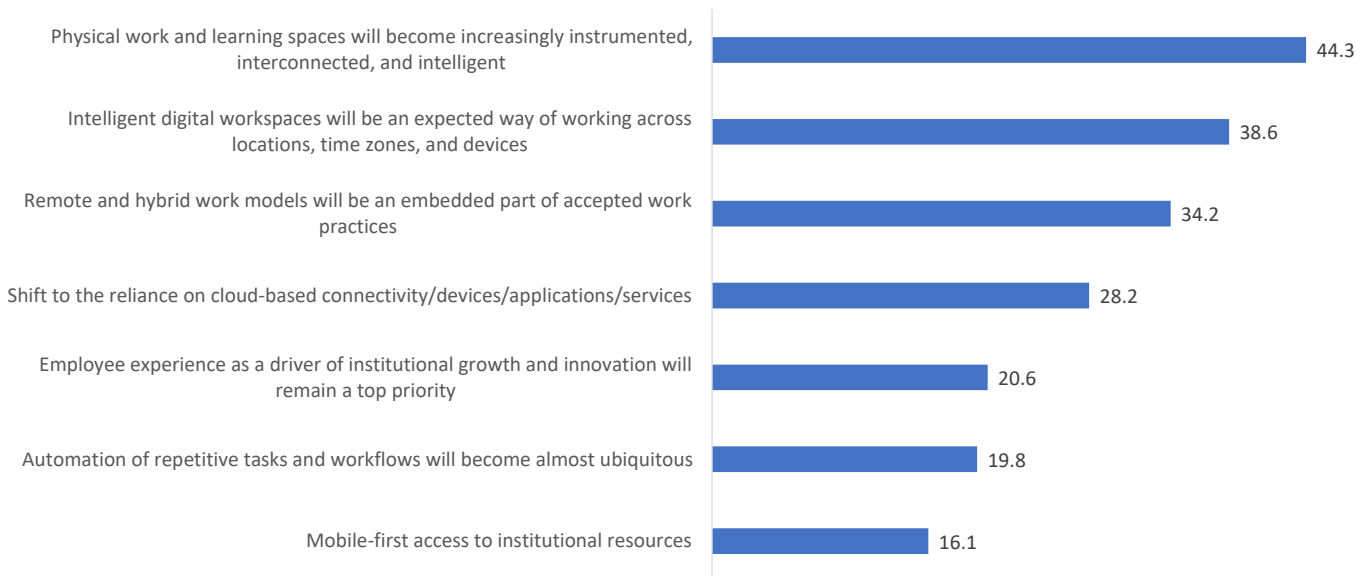
WHAT'S IMPORTANT

The future of education will be hybrid first, where institutions will develop the digital infrastructure to enable seamless shifts between remote and in-person services. This hybrid model will enable flexibility and choice for faculty, staff, and students and enable institutions to be digitally resilient in the face of future disruptions.

FIGURE 1: *The Future of Education Will Be Defined by Hybrid Experiences*

The Future of Education Has Been Changed in Response to the Pandemic

Q *In your opinion, which work practices and technology advances emerging from the pandemic are most likely to endure within your institution?*

Response	Value
Physical work and learning spaces will become increasingly instrumented, interconnected, and intelligent	44.3
Intelligent digital workspaces will be an expected way of working across locations, time zones, and devices	38.6
Remote and hybrid work models will be an embedded part of accepted work practices	34.2
Shift to the reliance on cloud-based connectivity/devices/applications/services	28.2
Employee experience as a driver of institutional growth and innovation will remain a top priority	20.6
Automation of repetitive tasks and workflows will become almost ubiquitous	19.8
Mobile-first access to institutional resources	16.1

n = 48

Source: IDC's Future Enterprise Resiliency and Spending Survey, Wave 11, December 2021

To succeed moving forward, education leaders must redefine how they conduct business and prepare for a future where hybrid education experiences are the expectation rather than the exception. In other words, they must take a "hybrid-first approach" to institutional operations and service delivery. Hybrid first is an institutional approach that leverages a hybrid experience infrastructure to enable continuity of service regardless of physical location and to seamlessly shift between remote and in-person services. Hybrid first can be applied to back-office, classroom, student, or campus experiences. IDC believes that by 2024, 40% of education institutions will have adopted a hybrid-first approach to operations and service delivery, driven by high-demand for flexible learning options among students and lifelong learners (source: *IDC FutureScape: Worldwide Education 2022 Predictions*, IDC #US47242621).

Most education institutions have not yet reached this next normal, but significant progress has been made as institutions continue to advance their digital transformation efforts. In fact, in the six months from October 2020 to March 2021, there was a significant drop in the percentage of respondents noting their institutions were focused on cost optimization (23% versus 8%) or resiliency (28% versus 0%), while the percentage of respondents noting their organizations were making targeted investments in technology to advance digital transformation goals more than tripled (from 11% to 37%) (source: *IDC Survey Spotlight: More Than a Year After COVID-19 First Disrupted Business Operations for Education Institutions, How Have They Adapted*?, #US47725121). While continuity of service is still a major concern for education institutions as uncertainties surrounding the pandemic and staffing shortages persist, education systems around the world have taken lessons learned from the past two years to help redefine the future of education and equip institutions to be digitally resilient in the face of new disruptions. Hybrid-first operating and learning models are at the core of digital resiliency.

Education Industry Definition and Core Attributes

The education industry encompasses private and public as well as nonprofit and for-profit elementary, secondary, and post-secondary/tertiary educational institutions of all sizes. These organizations provide formal learning toward the award of academic degrees, accreditations, and/or certifications, such as a high school diploma or a baccalaureate or university degree. Many institutions of higher education (IHEs) also conduct research and develop products and services for eventual commercial use.

Schools, colleges, and universities are influential members of their communities: Schools for younger children not only provide academic courses but also educate students about cultural and behavioral norms including national or regional songs, games, expressions, and food. They can act as community centers and shelters in emergencies as well as host many extracurricular activities. Higher education institutions have a social impact and a financial impact on surrounding communities, not only via students as consumers but also through partnerships and work with local businesses, government organizations, and community groups.

Key Priorities in Education

The mission to equip lifelong learners with the necessary skills to be productive members of society drives business priorities in education. Key priorities include the following:

» Accelerating hybrid-first operations and learning into full production, enabling flexible work, teaching, and learning and providing choice for a diverse faculty and student body in when and where they access resources and services

» Adapting internal processes and workflows to support digital and hybrid transformations, enabling faculty, staff, and students to access needed services and to conduct essential activities from anywhere

» Connecting a wide variety of stakeholders — students and alumni, parents and caregivers, teachers/faculty, researchers and administrative staff, donors and philanthropists — to maintain engagement via online, remote, and in-person services

» Offering faculty empowerment tools and professional development for a modern work environment and change management services so that faculty, staff, and students can absorb and adjust to new digital tools and classroom environments

Agility, Resilience, and Flexibility in Education Service Delivery

The expectations and needs of educators and learners have changed. Digital-native students expect a personalized and connected learning experience that keeps them engaged. Students in higher education want their experience to give them practical skills that will enable them to find well-paying jobs and excel in workplace environments, which place a premium on specialized degrees, training, and certificates. Nontraditional students, those who may be employees or have family obligations, need flexible options as they refresh existing skills or learn new skills to keep pace with employment opportunities. Similarly, educators want flexibility in how, when, and where they conduct their essential work, and they expect to access seamless digital tools and resources that augment and automate their workloads, enabling them to focus on higher-value tasks supporting students with one-to-one needs.

The COVID-19 pandemic has exposed existing business models limitations and service delivery challenges, highlighting the lack of flexibility many institutions have in shifting between in-person and remote services and the lack of agility to respond

quickly to a major crisis. These challenges are ongoing today, as many institutions are still struggling to shift back and forth between remote and in-person instruction as extreme weather events, staffing and bus driver shortages, and new COVID surges continue to disrupt operations and learning despite two long years dealing with pandemic-related challenges.

As of winter 2022, most K–12 institutions in the United States are back to operating in person, with some local and regional variations in how and when remote learning and operations come into play based on changing conditions. With schools now opting to swap snow days for remote days in some localities, and with increasing calls for schools to offer hybrid options for students with debilitating medical conditions that allow them to continue live classroom experiences when they can't be present, remote and hybrid learning are not going away. This means that physical and digital classrooms will need to be retrofitted for distance and hybrid teaching, curriculums will be redesigned to flex with changing instructional delivery models, and administration will transition to agile, online, and flexible operations.

This is a broader shift than just using video for online classes and meetings. True hybrid teaching and learning require new videoconferencing equipment in classrooms, such as high-quality wide-angle cameras, well-placed microphones, interactive whiteboards, and other specialized audio/visual equipment, digitally native content, scalability and flexibility to reach classes that may be in the hundreds or thousands, and the ability to use video to assess student progress and engagement. Today, most schools are not adequately equipped for hybrid-first operations and learning, but many have the tools in place due to COVID-era investments and must work to piece them together to enable a true hybrid future.

Beyond specific hybrid-first operations and learning investments, the areas of increased investments for education institutions in 2022 include cloud-enabled knowledge management, team collaboration software, content sharing and collaboration, and advanced conferencing technologies as educators seek to prioritize essential IT and determined which mission-critical tools they need to operate in a hybrid-first environment (see Figure 2).

FIGURE 2: *Top Technology Investments in 2022 for Education*

Q *What are the top 3 technology investments your organization made in 2021 or planned for in 2022 to enable communication and collaboration among all members of the workforce?*

Cloud-enabled knowledge management	33.7
Team collaboration software	33.0
Content sharing and collaboration	28.8
Advanced conferencing technologies	27.3
Work management/project management software	24.7

n = 48
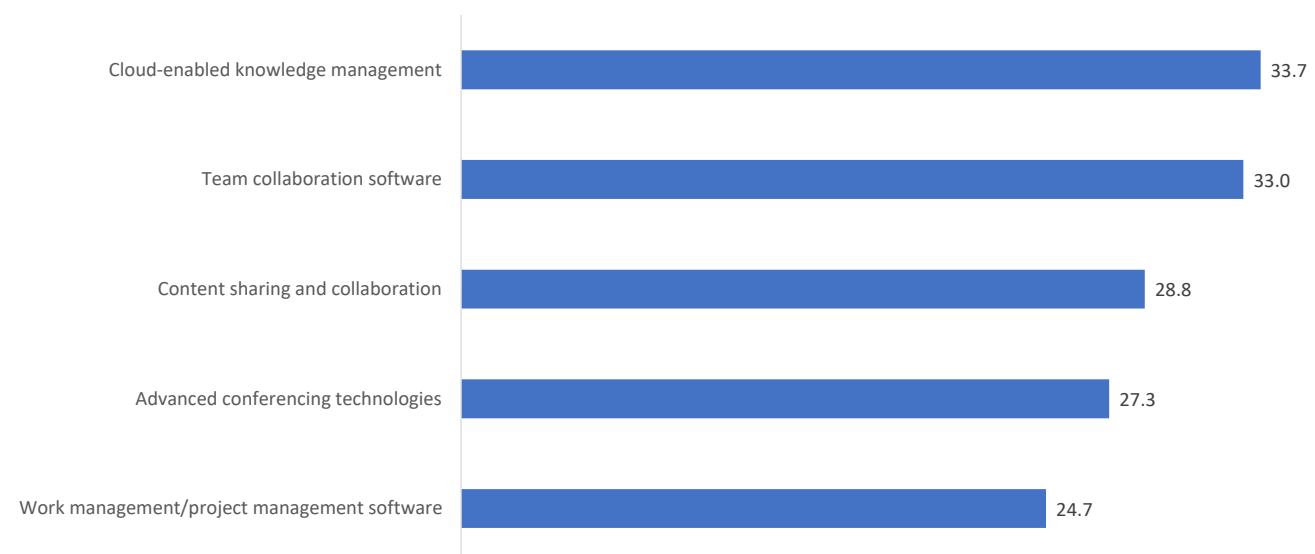
Source: IDC's Future Enterprise Resiliency and Spending Survey, Wave 11, December 2021

Considering Cisco

Cisco has a strong presence in education, and its core networking and server technology has long been part of the technology stack found in education datacenters. Cisco's expanded portfolio of education-focused products and services enables educators, students, and administrative staff to connect from a school/school campus or from home.

Cisco has been working to support institutional transformation via solutions that scale across mobile devices, desktop computers, home and small offices, meeting rooms, classrooms, and cocreation spaces with a single collaboration cloud platform for video, calling, messaging and other services as well as integrations with learning management systems, other applications, and devices.

Collaboration and Distance Learning

Cisco Unified Communications and Collaboration is an IP-based communication system that integrates voice, video, data, and mobility products and applications for a secure communication and collaboration platform used by education institutions.

Webex by Cisco works to integrate meetings and team collaboration with devices, including student devices and toll audio, for interactive and remote services, such as classes. Educators can use capabilities such as polling, meeting recording, or self-paced learning options that can be integrated with learning management systems. Webex has a variety of offerings, including:

» **Webex by Cisco** enables educators and students to teach and learn together or virtually, integrating meetings, messaging, and calling on a single integrated and trusted app. Staff and faculty can learn new systems via online training, cloud-based meetings, and video.

» **Webex Education Connector** is designed to integrate Webex with learning management systems. The Webex Education Connector enables classroom collaboration, facilitates distance learning, and simplifies administration.

» **Webex Calling** is an enterprise-grade cloud calling and team collaboration solution offered through a flexible subscription model. With centralized administration, security, and reliability, Cisco keeps the Webex cloud always on and always up to date so schools and universities can focus on their academic and research imperatives.

» **Cisco Call Control** delivers the right experience to the right user endpoint. These on-premises and integrated solutions allow customers to choose the consumption model that best fits their needs and reduce maintenance costs with infrastructure for voice, video, and messaging.

Secure Remote Access

Cisco understands the vulnerabilities of educators and administrators who are working from home and often access sensitive information. This is especially important as recent events have shown that remote devices have been used by bad actors for ransomware attacks and other hacking attempts. Cisco provides secure remote access via **Cisco Secure Remote Worker**, which offers an integrated set of solutions that provides secure access from any connection. **Cisco Umbrella** uses the internet's infrastructure to enforce security and block malicious activity before a connection is ever established. **Cisco Duo** uses multifactor authentication to verify user identity, and the device must satisfy security requirements before the user is granted access to IT systems and sensitive student, faculty, and administrative information. **Cisco AnyConnect** enables integrated virtual private network (VPN) access from any device, at any time, and in any place to provide secure access to critical IT resources.

Financing Options

Cisco has recognized the strain education institutions are under in the current environment. Cisco offers tools and solutions to help organizations afford purchasing technology upgrades or new technologies. **Cisco Capital** is designed to provide education institutions with flexible financing solutions for purchasing the latest technologies with no up-front costs and predictable payments. **Cisco Refresh** offers RF Certified Remanufactured Equipment that education IT managers can use to enable new service capabilities while making the most of their limited and often uncertain budgets. **Country Digital Acceleration** is a Cisco program built to expand access with country-level academic and industry partnerships and strategic investments. Currently, Cisco Country Digital Acceleration is involved with 37 countries around the world.

Market Opportunities and Challenges

Government stimulus and aid funding has helped education institutions weather the financial impact of COVID-19 in some capacity, though significant financial challenges persist at all levels of education. Nonetheless, most education institutions are increasing their IT budgets in the next year. As government aid runs out, there is greater uncertainty surrounding long-term sustainable funding for technology to support ongoing digital transformation efforts. This set of situations creates challenges for decision makers and will impact some areas of technology investments as institutions reprioritize projects and need areas. Many education leaders are concerned about how they will be able to sustain long-term funding for today's technology investments and fear they may fall off a "device cliff" in the not too distant future. These concerns in some ways are holding many institutions back from making big technology investments, despite the support they are currently getting. However, new priorities will focus on core areas of strength for Cisco's broad portfolio of technologies that enable transformation in key areas such as hybrid learning and teaching, remote teaching and administration, and security and campus operations. It is also a chance for education buyers to look at new funding mechanisms offered by companies such as Cisco.

Cisco faces an education market that is becoming increasingly competitive. Cisco's competitors also are focused on expanding their solution portfolios in terms of breadth and depth of product capabilities, professional services, cloud computing options, and Internet of Things (IoT) services. There is significant jockeying for market share around collaborative applications and video tools, both of which are essential for administrators, teachers, and learners experiencing remote and hybrid learning. Education buyers are being inundated with competitive offerings as they look for turnkey collaboration and communications solutions to simplify remote learning and work.

Key Takeaways

Looking beyond COVID-19, we note that the focus for the future will be on continuing modernization efforts to enable hybrid-first operations and learning to meet the changing needs of faculty and students who demand flexibility and choice in how, when, and where they work, learn, and access services. Many institutions are challenged to address pandemic-era technical debt and simplify their technology stack by prioritizing what digital tools they need to operate in this new environment.

Hybrid learning will continue to evolve and improve as schools, colleges, and universities move past the health, policy, and technical hurdles of the past two years and as the technology in place to serve them continues to advance at a breakneck pace. There is much work to be done to realize this future, but institutions that think beyond the pandemic to outline and execute on an intentional, long-term digital transformation strategy designed to enable hybrid-first capabilities are poised to succeed in the future while still serving the needs of today's teachers and students.

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About the Analyst

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Matthew Leger is Research Manager for IDC Government Insights responsible for the Worldwide Education Digital Transformation Strategies practice. Mr. Leger's research focuses on key IT and digital transformation trends as well as emerging solutions impacting how primary, secondary, and higher education and related services are delivered.

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Between reacting to change and reimagining education, there's a bridge.

Ever since two professors started Cisco in 1984, education has been in our blood. Cisco partners with education institutions to support educators, administrators, researchers, and students inside and outside the classroom with collaboration, security, mobility, networking, and data center technologies. We work with tens of thousands of schools, colleges, and universities around the world, and have trained 12.6M students through the Cisco Networking Academy.

As the world changes and continues to change, we're here to help. Cisco is and will continue to be an education company and your trusted technology partner supporting education. We believe it is critical to continue educating the leaders, dreamers, scientists, artists, researchers, caretakers, and doctors of tomorrow, without compromising trust, security, or privacy today.

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