



THE FUTURE OF EDUCATION IS HYBRID: ARE EUROPEAN UNIVERSITIES READY?

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March 2022

An IDC Industry Spotlight sponsored by Cisco

IDC #EUR148937122



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Introduction

Higher education institutions across Europe struggled to provide a quality student experience during the early days of the pandemic. Since then, as remote learning began transitioning from a quick fix to a permanent fixture of the higher education model, universities have accelerated their digital transformation (DX) journey by driving advancements in digital infrastructure, pedagogy design, estate management, and education delivery models.

IDC's *Future Enterprise Resilience Survey 2022* shows that 63% of European higher education institutions are now adopting hybrid-first work models; redefining processes, technologies, and policies; and engaging with more diverse talent pools. Almost two-thirds of institutions in Europe have already invested in solutions that facilitate interconnected, collaborative workspaces across teams, according to IDC's *Enterprise Acceleration Survey 2021*.

However, many of the institutions have rushed to enable hybrid experiences without careful consideration — retrofitting and filling the cracks in operational and IT models that are no longer fit for purpose. IDC's *Enterprise Acceleration Survey* also suggests that almost 60% of the region's higher education institutions still lack enterprisewide, integrated, or longer-term DX investment plans (see Figure 1).

AT A GLANCE

KEY STATS

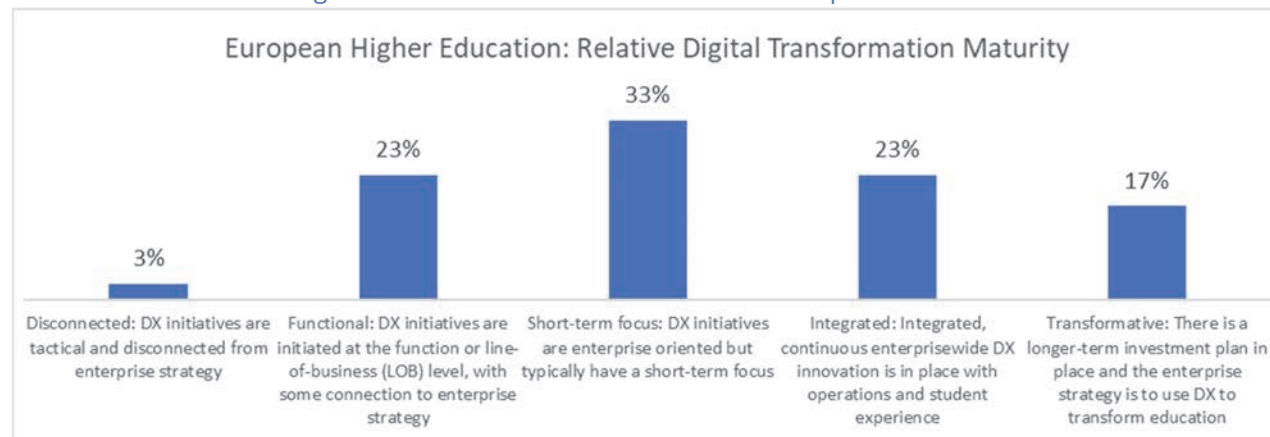
- » 63% of European universities and colleges are now adopting hybrid-first work models, redefining processes, technologies, and policies, and engaging with more diverse talent pools.
- » In 2022, 67% plan to invest in smart campus administration solutions and 60% in omni-experience student engagement solutions.

KEY TAKEAWAYS

Higher education leaders have embraced the need for DX strategies defined by digital resilience, student well-being and success, hybrid-first experiences, and lifelong learning. In navigating this change, partnering with a vendor that offers software-defined management and deployment options, while respecting legacy systems requirements, will be key.

FIGURE 1

How Would You Assess Digital Transformation at Your Institution Compared with Your Peers?

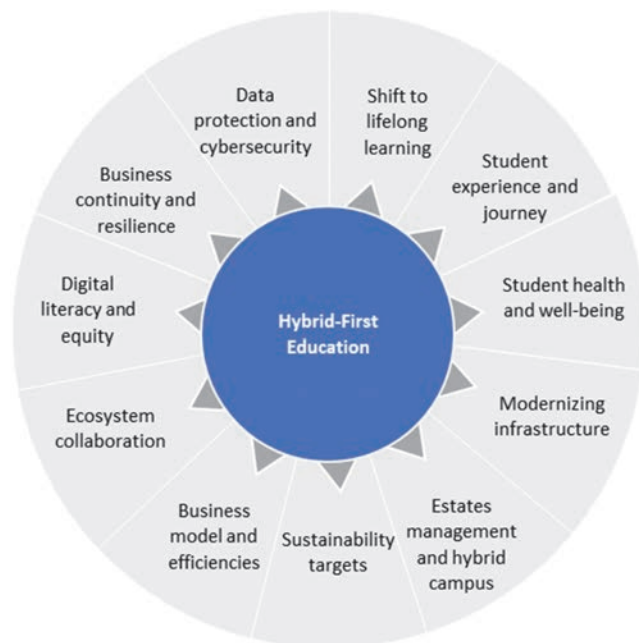


Source: IDC EMEA's *European Industry Acceleration Survey*, April 2021 (69 European higher education respondents)

With a return to pre-pandemic ways of working highly unlikely, institutions need to act now and boost their digital efforts to compete and survive.

"We must be able to transfer short-term measures to digitize teaching in response to the pandemic into future-oriented mechanisms. The goal must be high-quality education adapted to the times, to enable us to turn the unprecedented experience of teaching under pandemic conditions into positive prospects." Professor Dr Peter-André Alt, President of the German Rectors' Conference (HRK), December 2020

FIGURE 2
Key Drivers in European Higher Education



Source: IDC, 2022

Trends

The pandemic has unleashed new requirements from both the digital and physical infrastructure operated by European universities and colleges. Beyond the need to mature technological capabilities, these institutions are challenged by growing international competition in attracting students and staff while adapting or innovating business models to be more inclusive. At the same time, improving operational efficiencies and business resilience and enabling secure, high-quality, consistent, flexible, and engaging experiences — across the campus and beyond — for students, faculty, and other staff remain top priorities.

Shift to Lifelong Learning

Technological advancements, including the adoption of automation, machine learning, and AI, are making skills obsolete rapidly. This has resulted in a broader societal shift toward lifelong learning. This means workers are beginning to weave in and out of education or training

programs more frequently throughout their careers to remain competitive. Consequently, higher education institutions are rethinking traditional business models, recruitment and enrolment strategies, student services, and degree programs. For instance, universities in the U.K. and Germany are recognizing the need to offer more flexibility to working students, full time or part time, and are planning to continue to use hybrid, blended models well past the pandemic.

In several European countries, such as Germany, lifelong learning has received a big push from government through funding initiatives aimed at developing flexible study programs. These programs are intended to make higher education more accessible to people throughout their lifetime.

Modernizing and Adapting Both Digital and Physical Infrastructures

The pandemic has exposed the lack of agility in higher education to respond quickly to a major crisis. While institutions moved classes online and made ad hoc changes to adapt to remote learning, services such as student support and well-being, mentoring and career coaching, or staff skills training suffered. Going forward, it will be key that the digital and physical infrastructures underpinning higher education are structurally designed to be hybrid first.

A true hybrid learning environment requires a broader shift than just using video communication tools for online classes and meetings. According to IDC's *2021 European Industry Acceleration Survey*, 60% of European higher education institutions have invested in smart campus administration solutions. Institutions will need to further invest in their spaces to improve connectedness, instrumentation, and edge intelligence to enhance hybrid services while building in security, resilience, and sustainability.

This means upgrading or retrofitting classrooms and other spaces with modern and secure videoconferencing equipment such as lecture capture, audience response systems, cameras, microphones, interactive whiteboards, and other specialized audio/visual equipment. Providing secure, remote access tools such as virtual desktops is equally vital. (A virtual desktop enables users — students/teachers, other staff — to access their desktop and applications from anywhere on any kind of endpoint device, while IT administrators can deploy and manage these desktops from a centrally located datacenter.) True hybrid learning also requires scalable and flexible cloud-based technologies to reach classes that may be in the hundreds or thousands, and the ability to use video and other tools for mentoring or career services, extracurriculars, and student well-being services.

More than ever, colleges and universities need to ensure that there is value in an onsite presence (apart from social interactions) for students, while ensuring faculty, staff, students, and host communities feel safe with returning students. The campus experience will evolve by leveraging IoT to enable services from wayfinding to crowd monitoring to health monitoring via mobile apps and devices to support students. Tools such as access cards, video, and intelligent devices to monitor buildings will remain vital to ensure safety.

Most importantly, these new technologies need to seamlessly work together so that the faculty can focus on teaching and providing an engaging student experience whether in person or virtually.

Take communication and collaboration tools, for example. Cloud-based offerings that can securely scale across devices and spaces — e.g., home, small offices, meeting rooms, classrooms, and cocreation spaces — and offer a tailored suite of services for higher education institutions will be better positioned to cater to a hybrid education model. These services could include video calling, messaging, screen sharing, white-board sharing, recording, transcribing, attendance, and engagement monitoring. In addition, these tools will need to offer seamless integration with education platforms and applications such as learning management systems.

Reassessing Estates and Shifting to Flexible Spaces

The shift to hybrid education and flexible working more generally has created the need to better manage the vast real estates of university campuses. With space underutilization becoming a growing concern, universities have now begun their journey to becoming flexible, multipurpose spaces. This entails leasing spaces to third parties for events or flexible workspaces or even opening to public. This enables universities to earn extra revenue while enhancing collaboration and engagement across the public-private ecosystem.

Universities in the U.K. and Germany, such as the London School of Economics and the University of Salford, are already carrying out building audits to gauge the utilization of the campus buildings with a view to better assess the amount of space they need for their own operations.

Ensuring a Consistent, Seamless, and Engaging Education Experience for Students, Faculty, and Other Staff

Students, current and prospective, are seeking engaging digital experiences. It's more critical than ever to have a strategy that delivers a hybrid student experience at scale.

While institutions and students have realized many benefits to online learning, **poor student engagement levels** from prolonged remote learning have been a challenge for institutions. This has led almost 75% of European higher education institutions to invest in omni-experience (anytime, anywhere) student engagement tools and solutions in the past year, according to IDC's *2021 European Industry Acceleration Survey*.

A truly hybrid model requires **redesigning courses** and curriculums to fit the needs of a hybrid model and digital-native students but at the same time ensuring that it caters to students with wide-ranging digital literacy levels. Institutions will need to ensure faculty has access to professional development and ongoing support required to design and teach redesigned courses in a hybrid environment.

In addition, digital-native students expect a personalized and connected learning experience, and data shows that the increased demand for hybrid and online learning will continue, which in turn will impact business models.

The speedy migration to online learning during the pandemic also highlighted the **broad spectrum of digital literacy** in both faculty and students. There is an assumption that Gen Z students have a good level of digital literacy. This assumption can have severe ramifications as it puts students with comparatively poor digital skills at a disadvantage, especially if courses are designed on that assumption. It is therefore necessary to identify gaps in digital literacy across all parameters early on and at the individual level — both for faculty and students. Identified gaps need to be supported with tailored courses and training.

Technological problems, whether perceived or actual, can vastly undermine the learning and teaching experiences for students and teachers respectively — they just want to be able to focus on learning and teaching instead of troubleshooting technology issues. **Unpredictable performance of devices and networks** used by students and faculty is another challenge. Institutions now need to consider next-generation devices and networks that help ensure consistent, high-quality, and frustration-free experiences for both students and faculty.

Digital equity is another enduring challenge to delivering hybrid education. The pandemic has highlighted the unequal access to devices, apps, appropriate learning environments, and internet connectivity among students. To achieve the benefits of hybrid learning, institutions are exploring partnerships with technology vendors to ensure equitable access to devices, applications, and internet connectivity, while others are considering using "shared networks."

Developing a countrywide network of "shared campuses" where students across the country can access high-speed networks at a campus of choice can help address some of the challenges related to digital equity. The U.K.'s higher education system already has some of the prerequisite infrastructure to enable this. The country's JANET network, an internal, high-speed computer network, used by all of the U.K.'s publicly funded research councils and higher education institutions, is the most extensive national research and education network in Europe.

Data Protection and Cybersecurity

Data protection and cybersecurity continue to be an ongoing concern when implementing digital technologies that enable hybrid experiences. The magnitude and diversity of devices accessing institutional networks for remote experiences has grown exponentially since the pandemic, contributing to an increase in security attacks. In the U.K., for example, higher education providers have experienced an unprecedented spike in cyberattacks since 2020, with more than 80% of surveyed universities and 90% of colleges reporting a breach or a phishing attack in the year, according to the *Cyber Security Breaches Survey 2021* (DCMS).

The impact of these attacks has been severe, often causing maximum disruption during the critical period around exam results, clearing, and student enrolment. Statistics show that the

rising number of attacks has pushed universities to get better at defending against and preparing for cyberattacks. Almost 40% consider data security their top priority, according to IDC's *European Industry Acceleration 2021 Survey*.

Cybersecurity, however, is a delicate balancing act between usability, access rights, and preventive measures designed to reduce or prevent threats. A poorly balanced approach can result in lower productivity and unhappy users. Getting this balance right is particularly tricky in higher education where flow of information among students, faculty, researchers, and the surrounding community is crucial to operations. This requires a tailored approach underpinned by a zero-trust approach and managed security solutions. These solutions could include 24 x 7 threat intelligence monitoring; vulnerability assessment and management services; data and device access management through tokenization, multifactor authentication, and reverse proxy methods, network, and cloud-based security services (DDoS mitigation, DNS, etc.); endpoint security; next-gen firewall; and automated patching.

A Renewed Focus on Student Health and Well-Being

A significant outcome of the pandemic on the education sector has been a renewed focus on student well-being. Remote learning during the pandemic has resulted in a lack of interactions among students and between students and faculty that otherwise take place naturally on campus. The lack of interactions and a holistic campus experience, such as through societies or clubs, has meant that loneliness has become a widespread issue. According to a recent Association of Colleges survey, 94% of U.K. colleges acknowledged higher demand for mental health and well-being services for students during the pandemic. In Germany, a 2021 study showed that 47% agreed that the change in teaching methods caused significant stress (Fialho, Spatafora, et al, 2021, *Frontiers in Public Health*).

Mental health issues among students have been an ongoing concern. To ensure that shifts to hybrid learning don't aggravate student well-being, universities and colleges must ensure hybrid experiences go beyond the classroom to encompass the entirety of student experience. It is no longer enough to invest in technical capabilities to move classes online; it is equally important to ensure that holistic student support services, such as student mental health services, are digitally accessible. Technology solutions such as student life-cycle monitoring can offer insights to identify and support students at higher risk. According to IDC's *Enterprise Acceleration Survey 2021*, only 45% of higher education institutions create or use student life-cycle journeys based on advanced data analytics to get insights into their well-being or progress in their courses.

When we fully imagine the future of higher education, there is a blending of digital, virtual experiences and physical, in-person experiences. Student health services would offer health tracking via fitness trackers as well as check-ins via text and supported by telehealth appointments and in-person sessions, providing ongoing engagement as well as personalized attention.

Cisco as a Platform to Securely Take Education Beyond the Classroom

Cisco offers a comprehensive but easy-to-use platform that can help higher education institutions enable a secure and frictionless shift between in-person and remote experiences and therefore a continuity of service across space and time and through disruptions. The platform covers a range of digital infrastructure, from a reliable WiFi to network and physical security to endpoint management. Configured and installed within minutes, the platform can be managed remotely from an intuitive web-based dashboard from any web-enabled device.

Through the platform and other offerings tailored to higher education, including Webex and Cisco Umbrella, Cisco is aiming to help institutions adapt their business priorities to offer:

- **Accessible, collaborative, hybrid learning.** Universities are shifting from merely transferring the face-to-face learning to online to rethinking the pedagogy that fully integrates in-person with remote, traditional teaching with flipped classrooms and taught courses with practical work experiences. To help achieve this, Webex by Cisco offers a highly secure and flexible platform that aims to make the hybrid experience significantly better than in-person. Recognizing that collaboration needs to transcend geographic and language barriers, Cisco has also added features such as AI-powered transcription and real-time translation, while ensuring seamless integration with learning management systems (LMS). The integration with LMS means teachers can schedule and record Webex classes and add the recordings to the LMS so that students can access them anytime, anywhere.
- **Resilient, environmentally sustainable, people-centric campuses.** The traditional estate master plans are now no longer feasible due to uncertainty and volatility; the focus must be on designing the physical campus into a smart hybrid campus that enables flexibility, resilience, agility, and energy efficiency. Cisco's offerings for smart hybrid campuses fit the bill well. With its Digital Network Architecture (DNA) Spaces every piece of campus infrastructure becomes programmable. This enables the use of location analytics, for instance, to gain insights into the physical environment, movement, and behavior of people and devices across spaces and buildings using IoT technologies.
- **Secure remote access.** Cisco understands the vulnerabilities of educators and administrators who are working from home and often access sensitive information. This is key given that bad actors are increasingly using remote devices 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.

In addition to these, Cisco Duo uses multifactor authentication to verify user identity, with the device needing to 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.

Challenges

The major challenges to adoption of a hybrid education model are both institutional, such as lack of budgets, and cultural. Universities will need to rethink their budget allocation between physical infrastructure and digital or IT initiatives.

Change management becomes critical when embarking on this transformation as resistance is likely from stakeholders complacent with existing ways of working in education delivery. Tailored communications and trainings will be needed to help students, faculty, and other staff adapt to the workings of a smart hybrid campus and what it means to them — both from benefits and policy perspectives. Technology providers such as Cisco can be a major resource in this regard. Working with experts from the providers and implementation partners, higher education IT executives can map out new processes and controls and train their digital or IT teams.

Finally, there is data security and privacy. Fears remain around losing control over data, confidentiality, availability, and integrity. However, the juxtaposition is that digital leaders within higher education are adopting technology platforms that enable hybrid education *because of* the security benefits offered by them. The Cisco Meraki Platform, for instance, sets the foundation for an effective zero-trust security model, acting as a bridge between an institution's network and cloud security, providing 360-degree security for the institution's endpoints, networks, and applications.

Key Takeaways

With remote and hybrid learning models expected to become a permanent fixture, any remaining challenges must be overcome — fast. Universities and colleges must put the right technology and security measures in place to offer consistent, engaging, flexible, and seamless experiences, whether students are at home or in the lecture hall. Failure to do so will only dampen an institution's competitiveness and growth potential as students look for more value for money and flexible modes of learning.

Looking beyond the pandemic, a hybrid experience infrastructure is an operational and strategic imperative for institutions to remain competitive in a world that is changing at a breakneck pace. Higher education leaders must develop and execute DX strategies that are not defined by budgetary or cost-cutting priorities, but by digital resilience, student well-being and success, hybrid-first experiences, and lifelong learning.

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About the Analyst

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Rimal Likhari brings a wealth of knowledge and skills from her decade-long experience as an analyst in both public and private sectors, with a specialization in higher education, research and innovation, smart cities, and innovation economies. Over the past decade, she has led the delivery of strategic research and analysis projects for universities, local governments, corporates, and private equity firms, distilling the projects into business cases, opportunity assessments, market-entry, and strategy recommendation reports.

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