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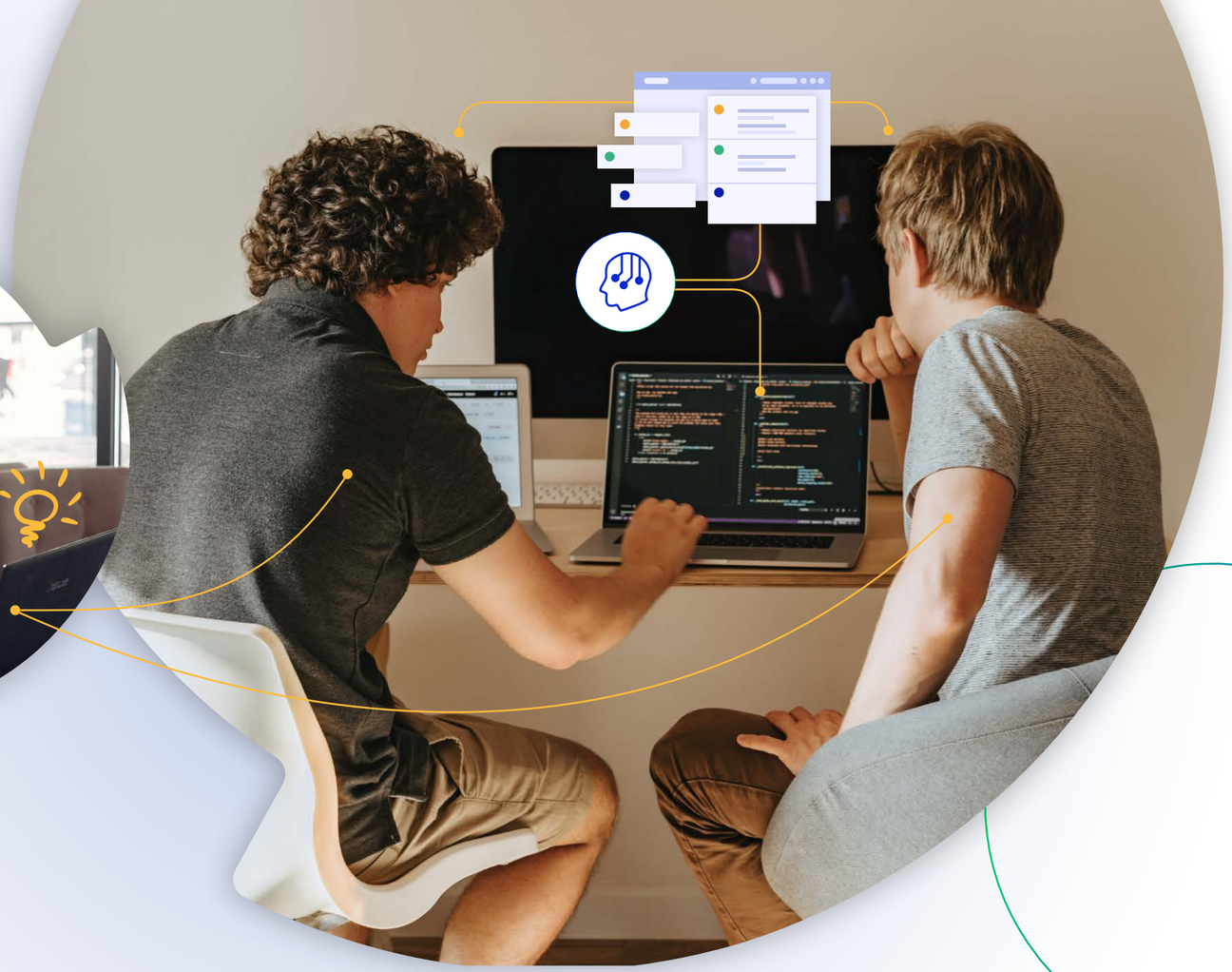


The CIO’s Handbook:
Navigating Human-Bot Collaboration in Higher Education

Contents

The role, expectations and influence of IT departments in higher education are shifting.

In this guide, we will show how this presents a host of challenges, but also how it also offers IT and CIOs great opportunities to:

- Impose their perspective within the institution's strategic decision-making
- Address and meet the heightened digital expectations of today's students
- Overcome budget constraints with cost-effective communication strategy & technology.

As higher education adopted new technologies to navigate the challenges posed by the COVID-19 pandemic, the demand for digital grew exponentially. Many of the initial temporary solutions have quickly become permanent fixtures as students warmed to blended learning and faculty to remote working. This guide uncovers the lasting effects of this transformation, particularly focusing on the evolution of the CIO and the demand for digital in the face of limited budgets and burgeoning tech stacks.

This guide also digs into the key IT challenges, supported by practical solutions, real-world examples and innovative technologies that can empower IT leaders in navigating the new digital landscape, enhancing student experiences, and driving institutional success.

Central to this success is human-bot harmony within IT support and across departments. This strategy is based upon utilizing the distinct benefits of human and chatbot support at the right time, for the right query. While human support is needed for personal and complex communication, the automation of bots is essential to achieve efficient, cost-effective support. When this partnership is perfectly balanced, support teams will achieve:

- Lower support costs
- Lower email and call overwhelm
- Enhanced student experience

Read on to find out how your school can achieve the perfect human-bot partnership that will help each department contribute to the institution's key goals.

An analysis – The current state of IT in higher education

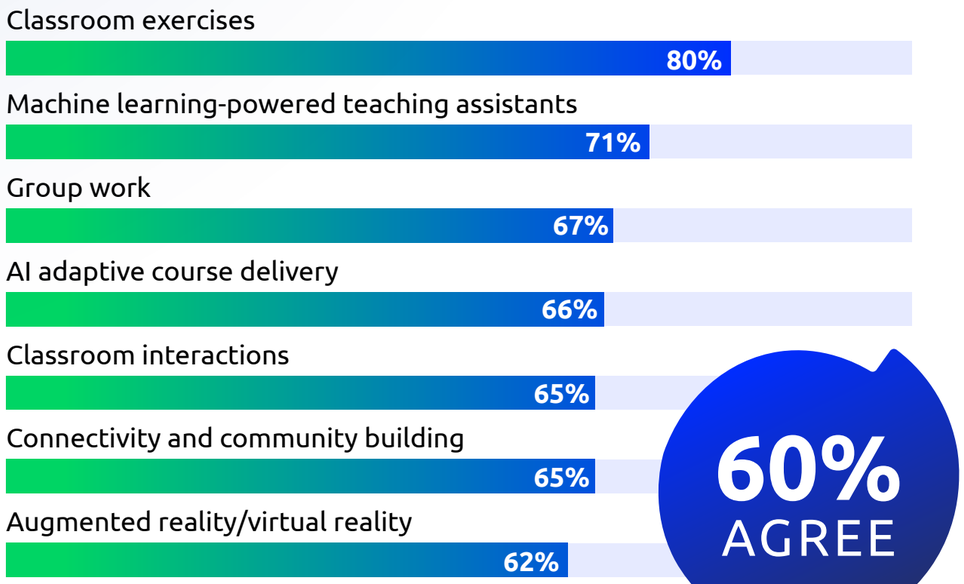
"There will never be a return to what we knew as normal". These are the words of a university president taken from the latest IT Issues leadership interviews, and it couldn't be truer. COVID-19 has left deep, transformative marks on the higher education landscape. Although many of these effects were undeniably damaging, the moment also served as an important time of reflection on the progress of digital transformation in higher education and the role of IT leadership.

Digital expectations grow

To help navigate social distancing measures and school closures, colleges and universities across the world adopted new systems and applications to ensure they could continue providing their services. In a McKinsey & Company survey of public and private nonprofit schools in the United States, respondents reported a 19% average increase in overall use of learning technologies from pre-pandemic to mid-pandemic in November 2021.

Technologies that enable connectivity and community building experienced the greatest rise at 49%, followed by group work tools at 29%. Across every technology category surveyed, respondents reported increased usage.

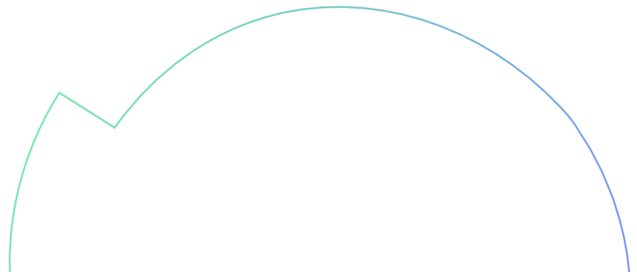
"Has technology helped to improve your learning and grades?"



While many presumed that institutions would revert back to 'normal' after COVID-19 and the hastily adopted technologies would be dropped, this has not been the case. Many technologies that were initially seen as 'stop-gap' solutions during the pandemic have remained because of the clear popularity among faculty and students alike.

60% of students said that technologies introduced since COVID-19 had improved their learning and grades, as reported in the aforementioned McKinsey & Company survey. Of these grade-boosting technologies, two came out on top: 80% of students pointed to classroom exercises, and 71% to machine learning-powered teaching assistants.

The evident need to adopt new emerging technologies has been clear for many years, but the pandemic has accelerated this demand, placing IT departments between a rock and a hard place – to provide students with a richer technological experience while streamlining a bloated tech stack and cutting costs.



Evolving roles & responsibilities

Without many of these technologies adopted during the pandemic, higher education would have ground to a halt. These programs and tools became the primary means of ensuring the continuation of education and administrative functions. Although most institutions have long understood the significance of a robust IT infrastructure, the pandemic dramatically heightened its importance. This has in turn significantly altered the role of IT and its leadership.

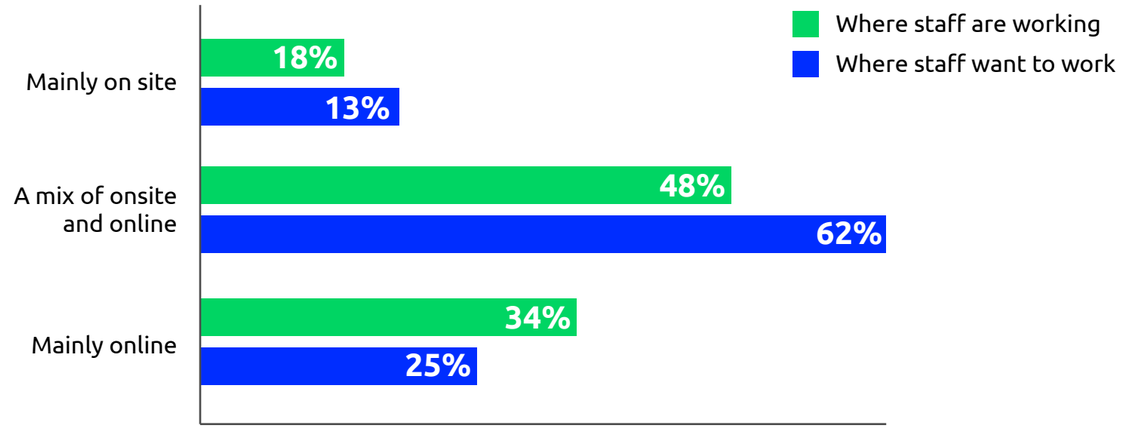
Before COVID-19, CIO's influence over strategic planning was often limited. Traditionally, the role focused on operational support, centered around infrastructure maintenance and management, rather than strategic thinking. However, as the pandemic shone the brightest of lights on their reliance of technology, IT leadership has been given a far greater voice in institutional strategy.

CIO's have rightfully earned more recognition and influence in strategic planning discussions, evolving their position from a flight controller managing infrastructure, to a **co-pilot leading their school's digital transformational journey.**

Remote work & blended learning is here to stay

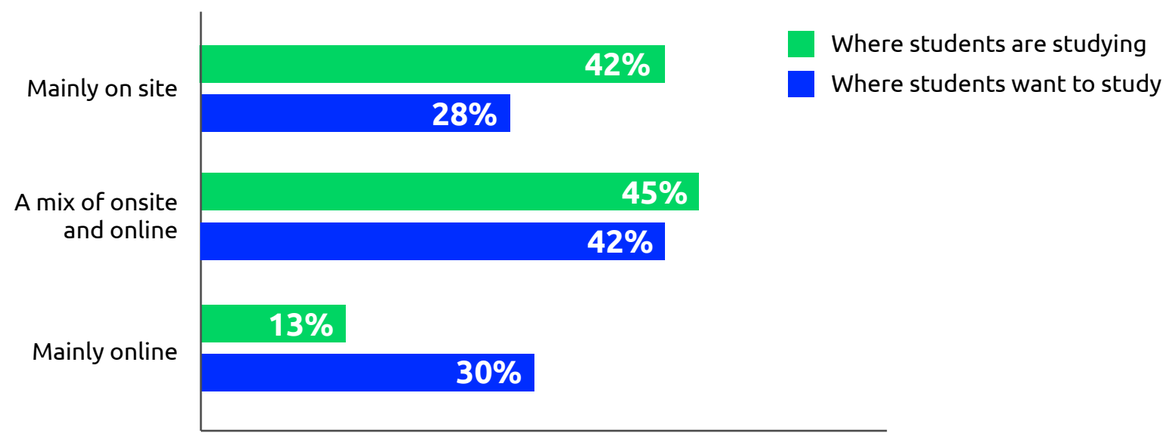
For many staff and students, remote working and studying brought about by COVID-19 gave them better work-life balance and wellbeing, and they're not ready to completely hand this in.

In a survey of higher education professionals conducted by Jisc from November 2021 to June 2022, 48% used a mix of home and on campus working, while 62% said they would prefer to do so in the future. The picture is similar for students too. Almost two years on from the pandemic, and another survey by Jisc revealed that 42% of students experience a mix of onsite and online teaching, while 45% would prefer this.



62%
of staff want to work in a mix of online and onsite

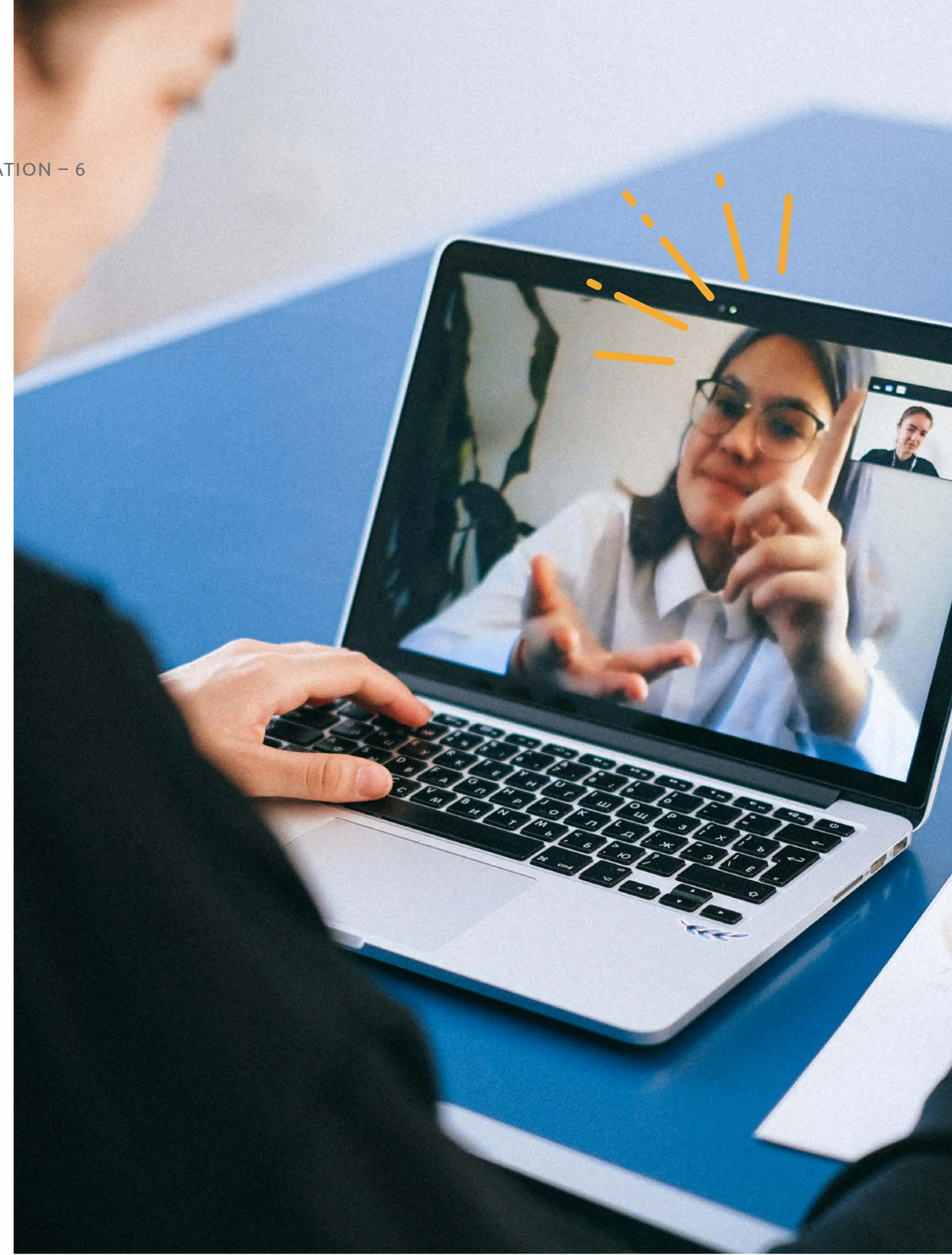
42%
of students want to study in a mix of online and onsite



This demand for remote working flexibility from faculty and for blended learning from students will require more technological adoption from schools, yet it doesn’t end here. IT are now faced with a relatively new challenge of training and supporting both parties on this new tech remotely, and many are falling short. In Jisc’s survey, 71% of staff rated the support they received to work effectively online as above average. While this does show that their basic needs are being met, only 18% received an assessment of their digital skills which may indicate “a reactive rather than a strategic approach to improving the workforce's capabilities.”

Similarly, from a student-perspective, 77% of students rated the quality of the online learning environment as above average, yet only 37% think they’ve been given the chance to be involved in decisions about learning platforms. On top of this, just 58% feel they are supported to use their own devices.

Students are valuing the continued digitalization of their higher education experience, but the task now is for IT to deliver this in a way that works for everyone.



Challenges for CIOs in 2023

With growing competition within higher education, combined with shrinking enrollment and high dropout rates, it's vital for IT to do its part in improving the full student lifecycle. To do so, CIOs need to know what key challenges they face now and will face imminently.

1. Taking a seat at the strategic table
2. Handling digital expectations
3. Tackling high request volumes with insufficient staffing
4. Managing cybersecurity threats & privacy regulations

> Rather than limiting the role to operations and infrastructure management, many CIOs are now far more involved in **strategy innovation management**.

1. Taking a seat at the strategic table

As discussed in the previous chapter, the role of CIOs in higher education has significantly evolved since COVID-19 stressed the urgent need for digital transformation. Rather than limiting the role to operations and infrastructure management, many CIOs are now far more involved in strategy innovation management.

While this naturally presents great opportunities within the role, it also poses many challenges for CIOs. As Susan Grajek summarized in The EDUCAUSE 2020 Top 10 IT Issues, this evolved position requires three major components: "a change of mindset, a change of CIO competencies and experience, and a change in IT funding."

For many schools, a change of mindset around a CIO's value and involvement in strategic planning is underway, fueled by the reliance of technology during the pandemic. However, this acceptance is certainly not ubiquitous. Many higher education leaders still believe that IT leaders should not be responsible for institutional strategy. This opinion is reflected within the

lack of CIOs within cabinet posts – only 58% sit on the cabinet. Notably, those who hold cabinet positions are three to five times more likely to frequently engage in strategic activities than their counterparts without cabinet appointments are. To help shift this mindset, schools should consider having their CIO sit on the president's cabinet and ensure that they are brought into wider conversations that aren't solely technology focused.

A change in CIO competencies and experience may not be so quickly attained, but coaching, mentoring and leadership programs will go a long way to help CIOs develop the necessary transformation skills and strategic mindset. The final component for success is changing the perception of IT funding. For many years, IT departments have been perceived as cost centers rather than strategic assets or value-adding entities. They are viewed within the prism of expenses associated with technology infrastructure, maintenance, and support, rather than recognizing the strategic contributions that IT can make to the institution.

This can result in significant budget constraints, hindering their ability to invest in new technologies, upgrade existing systems, and hire additional staff. This can in turn impede their ability to meet the evolving tech needs of the school, stifle growth and miss cost-saving opportunities. As the proverb goes, "you need to spend money to make money"!

By actively working to shift the perception of IT from a cost center to a strategic asset, IT departments can gain greater recognition, support, and resources to effectively meet the technological needs of higher education institutions and directly contribute to their success.

2. Handling digital expectations

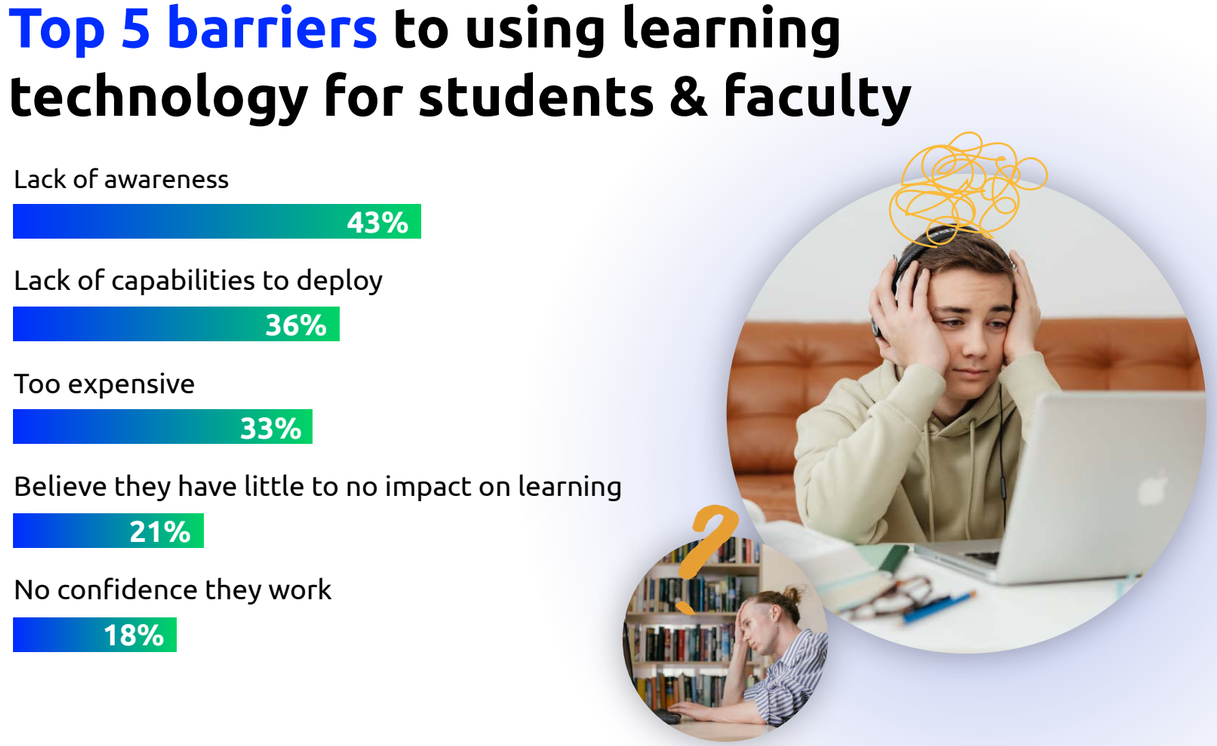
As previously discussed, the growing expectation for remote working and blended learning is inevitably forcing IT departments to adopt more programs and systems. Staff seek the flexibility to perform their roles from off-campus locations, while the majority of students want to adopt some level of blended learning. Both necessitate the scaling up of their network infrastructure, optimizing network performance, and implementing more measures to safeguard data and privacy.

On top of this, today's students also have high digital expectations. Their familiarity with technology and their understanding of its potential has created a demand for the very best digital experience from their school, especially in light of rising tuition fees and affordability issues. IT departments must ensure they provide and maintain high standards of technological resources to help foster student success and remain competitive.

With the adoption of these new programs and systems, IT departments must also provide adequate technical support and training. They need to develop user-friendly documentation, offer training sessions, and establish fast and accurate helpdesk services to ensure staff, faculty and students:

1. Are aware of the technology available to them and,
2. Can effectively use this technology to improve their experience.

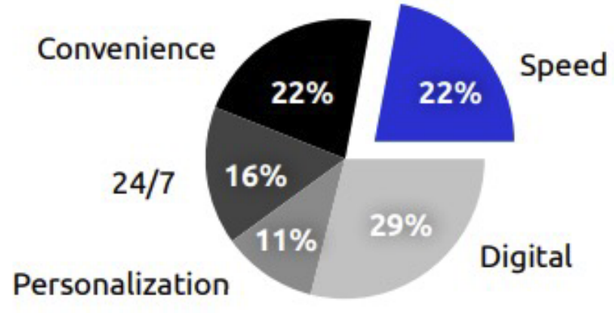
When asked what the key barriers are to using technology, students and faculty respondents cited lack of awareness first, followed by lack of capabilities to deploy.



A key challenge for IT departments will be supporting each of these stakeholders in different styles in the adoption of new technologies. Moreover, the support especially to students must be fast and convenient. Grown up surrounded by technology, students have high digital support expectations. When polled on the most important support factors in our higher education student engagement survey, speed and convenience were voted joint second-most important (after digital support). In the same survey, 59% of students said they are less likely to engage with their school if they have to wait more than 30 minutes for a response to their query.

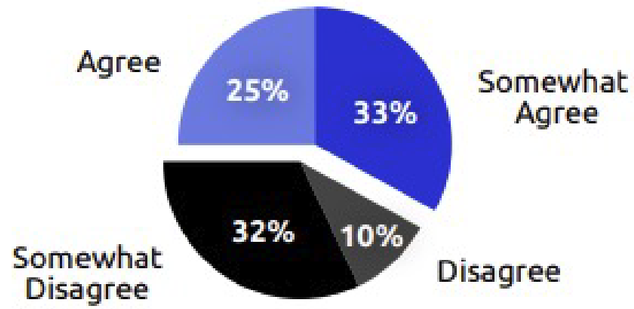
The takeaway - institutions will only enjoy ROI on new technology if it is accompanied by fast, convenient, and accurate support that helps and encourages them to use the technology in the first place.

"What is the most important support factor to you?"



HOW DO YOU FEEL ABOUT THIS STATEMENT?

"I am less likely to engage with my school if support agents taken more than 30 minutes to respond to my query."



3. Tackling high request volumes with insufficient staffing

Higher education institutions have a large and varied user base, from students and faculty to staff and administrators. This diversity leads to a wide range of requests for IT support as users require varying assistance with different technologies and systems. For most IT teams, this volume of support requests is already very high, and yet it is only set to only grow as schools:

1. Adopt new technologies to improve the student experience and warrant high tuition fees against a challenging economic backdrop
2. Allow more staff to work at home and students to study remotely.

Exacerbating this challenge further, many IT departments lack staffing due to budgetary constraints and high employee turnover. This is creating a high student to staff ratio which inevitably results in slow resolution times, high ticket backlogs, and an inconsistent engagement experience for students & faculty. Moreover, the support staff overwhelmed with these high volumes often become burnt out and leave their roles, thus shrinking an already under-staffed team.

To avoid overwhelming request volumes and mitigate low staffing, IT departments can adopt a range of technologies, including:

- A robust ticketing system that helps you efficiently sort through the support queue with tagging, filtering, SLAs, and intelligent automation to accelerate resolution.
- Knowledge bases for each user base to encourage self-service and reduce agent workload.
- AI chatbots that resolve all the common and time-consuming requests without any human involvement (Much more on this later).

4. Managing cybersecurity threats & privacy regulations

Higher education institutions face significant challenges when it comes to cybersecurity threats. These institutions hold vast amounts of sensitive data, including personal information, financial records, and valuable research data, making them attractive targets for cybercriminals. Alongside this backdrop, colleges and universities also face a range of unique scenarios that pose even greater cybersecurity challenges, including:

- **Diverse and Expansive Networks:** Higher education institutions typically have complex and extensive networks that connect numerous departments, research facilities, and student housing. This sprawling infrastructure increases the attack surface and makes it challenging to maintain consistent and robust security measures across the entire network.

- **User Behavior:** Higher education environments consist of diverse user groups, including students, faculty, staff, and external contractors. Each group has different levels of cybersecurity awareness and practices, making it difficult to enforce uniform security policies.
- **Limited Resources:** Many higher education institutions face budgetary constraints which can limit investments in robust cybersecurity measures. Insufficient funding may result in outdated systems, inadequate training for staff, and a lack of dedicated cybersecurity personnel.
- **Bring Your Own Device (BYOD):** Higher education encourages the use of personal devices for learning and research purposes. While this enhances flexibility, it also introduces challenges in securing these devices, as they may have varying levels of security and be more susceptible to malware or unauthorized access.

As well as managing these varied cybersecurity threats, IT departments are also faced with the challenge of ensuring compliance with data privacy regulations. This can be complex and time-consuming, made even more so by schools increasing use of data to enhance institutional performance and student success.

Introducing Human-Bot Harmony

Perfect the balance of human personalization with chatbot efficiency

As an IT professional, you'll be more aware than most of the speed of advancement of automation in the past few years. Automation technologies are revolutionizing the way organizations interact with customers, with AI driving this sector forward. Between 2023 and 2030, AI is expected to experience an annual growth rate of 37.3%, as reported by Grand View Research.

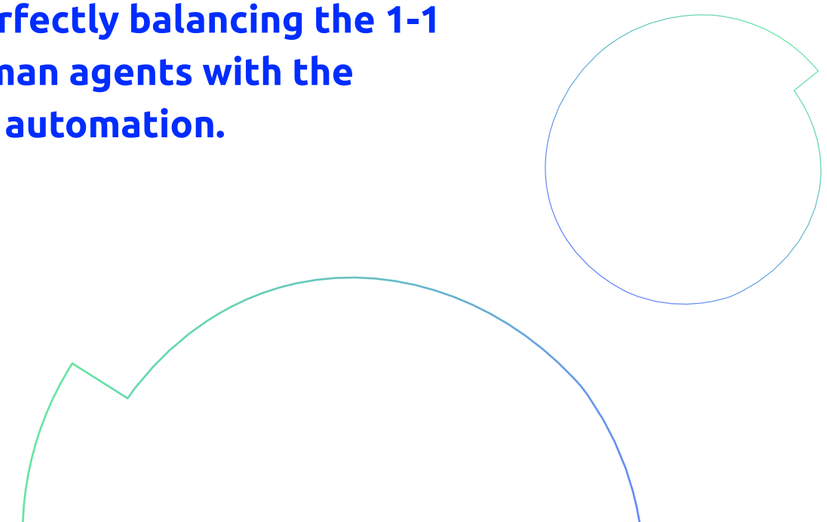
One of the most effective uses of automation is emerging within customer service and support, most notably in the forms of:

1. Chatbots
2. AI-powered virtual assistants
3. Self-service knowledge bases
4. Automated ticketing systems

The education sector is notoriously conservative in the adoption of new technologies, but the overwhelming benefits of automation are helping to quash this trend. With a single AI chatbot in place, departments can **automate over 80% of requests**. With less than 20% of all requests routed to support staff, teams can manage more queries, more quickly, and more accurately – all achieved with limited staffing and budget constraints.

While the efficiency of chatbots is undeniable, this automation can't and shouldn't function alone. Human engagement is still a vital aspect of student support. Certain complex and sensitive issues often require human empathy and creativity that even the most advanced AI cannot provide.

The most effective support is achieved through human-bot harmony, perfectly balancing the 1-1 personal support of human agents with the efficiencies of bots and automation.



Human-bot harmony - in action

When set up correctly, human agents combined with chatbot automation can create the perfect recipe for cost-effective support that improves the student experience. Here is a top-level summary of how this multi-layered system can work.

LAYER 1

AI/NLP chatbot handles 80%+ of requests to deliver instant, 24/7 support across all digital channels

- The bot is integrated with key systems (SIS, LMS, CRM) to pull data for personalized and accurate support.
- If the bot can't resolve the query, the chat is automatically routed to the most appropriate live chat agent based on predefined rules (ie. expertise, workload, or language proficiency).
  If necessary, the user can be given the option of waiting in a queue or booking a meeting.

LAYER 2

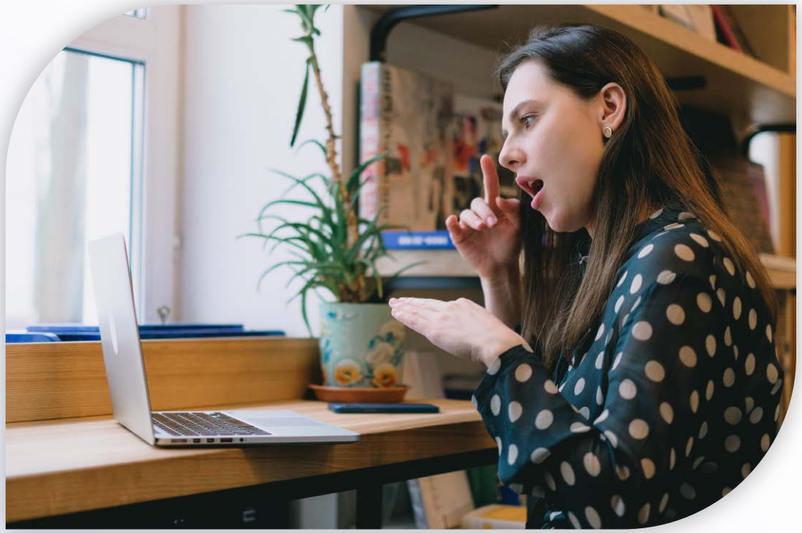
Live chat agent handles 3-5 simultaneous requests with the support of automation tools & smart features.

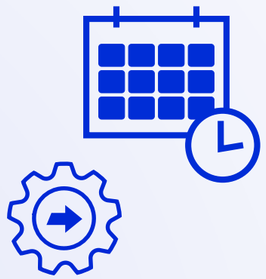
- AI-powered knowledge base virtual assistant, auto-language translation and canned messages all improve communication efficiency and accuracy.
- If the live chat agent can't resolve the situation within the chat, a ticket is created and automatically routed to the appropriate specialist. Common workflows, notifications and prioritization needs are automated to reduce administrative tasks.

LAYER 3

Specialist agent supports the individual with their complex request either live via chat or asynchronously through a messaging channel.

- The agent delivers personal, 1-1 support with co-browsing, audio/video chat, and file sharing. Integrations with key systems provide agents with user data so they can provide helpful and personalized assistance.
- The user receives the expert help they need quickly because most requests have been resolved at layer 1 or 2.





Essential features for human-bot harmony in student engagement platforms:

AI Chatbots

Personalized student assistance, 24/7

User-Friendly Interface

Intuitive design catering to diverse user groups

Real-Time Analytics

Monitor student engagement and adapt strategies

Secure Data Handling

Compliant with legal regulations & ensures privacy

Scalability

Adaptable to growing student population & varying needs

Integration

Seamless integration with existing educational tools & platforms

Accessibility

Inclusive design accessible for all students, including differently-abled

Customization

Allows personalization according to institutional needs and preferences.

Automation that drives revenue across departments

By perfecting the blend of human and bot engagement, IT departments experience the following benefits:

- **Lower support costs:** By managing 80%+ of requests, bots increase support capacity without needing to increase team size.
- **Lower request volume**, improved response times: With agents responsible for significantly lower request volumes, they can respond more quickly so students & faculty experience low wait times.
- **Personal & helpful support:** With more capacity and admin tasks automated, agents can deliver more personal support and better handle more complex issues.
- **Reduced staff turnover:** With automation supporting agents across their role, employee satisfaction significantly improves as they are no longer overwhelmed with requests.

As well as benefiting IT support, a balanced human-bot partnership also has an instrumental impact on the institution's key revenue goals across departments. IT offices that wish to support their institutions' objectives and advance their tactical and strategic influence should recommend these technologies. Comm100's Omnichannel Communications Platform may be the perfect solution for achieving these goals while ensuring a streamlined tech stack and rigorous security compliance – more on Comm100 in the next chapter.

Marketing: Increase enrollment

Deliver 24/7, convenient support to prospective students to improve both the quantity and quality of engagement with prospective students to boost enrollment.

Admissions: Improve yield

With a bot delivering fast, 24/7 responses alongside personalized human support, Admissions departments can attract, and stay engaged with, prospective students for healthier yield rates.

Student Services: Reduce attrition

Student Services can reduce attrition by improving the student experience with always-on, attentive communication so every student feels heard and supported.

Advising: Cut summer melt

When students have enrolled but are yet to begin their studies, Advising teams can cut the average 10-40% summer melt by providing accessible communication of bots with engaging, personal support of human agents.

Student Housing: Improve occupancy rate

To encourage students to choose and remain in the school’s accommodation for healthier occupancy rates, deliver accessible and fast communication that builds engagement and trust.

> "With Comm100 Live Chat combined with Comm100 Chatbot, we can now deliver fast, efficient, 24/7 support that helps us engage with more prospective students.”
>
> **Victoria Anderson**
>
> Manager, Admission Operations, Undergraduate Admission and Recruitment, Queen’s University

Comm100 & Human-Bot Harmony

Comm100 specializes in human-bot harmony for higher education. The Comm100 Omnichannel platform integrates every key channel into one unified console, including live chat, email, ticketing, bots and automation, knowledge base, social media, and SMS.

With packages for every higher education department, Comm100 can help IT unify the entire student and faculty communication strategy, while simplifying vendor relations and streamlining the IT infrastructure with one piece of tech.

How can Comm100 help IT departments?

- **Keep up with digital expectations**
  With high support expectations from today's students, Comm100 helps you provide support on the channels they want to use – quickly, conveniently, and with personalization.
- **Manage resource constraints**
  By automating 80%+ of common queries with Comm100's bots and streamlining operations with an AI-powered omnichannel platform, you can scale support capacity while cutting costs.

> "We trained about 270 people of various ages and technical proficiencies to use live chat for the open house event. Everyone found it very easy to learn and use. It's a **very intuitive tool**, and even those with less tech ability were up to speed in no time."

Derek Gaucher
Coordinator of IT Solutions
Dawson College

- **Ensure regulatory compliance**
  Comm100 is compliant with SOC 2 Type II, ISO 27001, PCI DSS, and a host of other international compliances so that you can trust your data is secure. To meet strict security guidelines, Comm100 can also be deployed via the cloud and on-premise.
- **Mitigate security threats**
  With Comm100 you can consolidate your range of communication channels into a single, more secure platform, reducing potential points of vulnerability.
- **Streamline tech infrastructure**
  With every communication channel integrated into one system, Comm100 helps IT departments significantly simplify vendor relations and cut their tech stack.

Join top institutions like Stanford University, McMaster University, The Open University, and Thompson Rivers University who are using Comm100 to deliver the perfect balance of human-bot engagement.

Comm100

Higher Ed CIO Checklist - Achieving Human-Bot Harmony

Find out if your IT structure, strategies & setup are up to scratch

Assess the current state of your school's technology infrastructure to find out what progress you need to make to achieve secure, efficient, and balanced human-bot support.

Take the test