



**Reshaping the student experience**

The role of technology in enabling student-centricity

Introduction	3
What students in 2022 had to say	8
The higher education technology landscape	15
Three technologies to improve the student experience	17
1. Curriculum management systems	19
2. Immersive learning technologies	23
3. Composable IT strategies	27
Conclusion	31

# Introduction

Back in the fall of 2021, we launched Deloitte's first national survey of post-secondary students and recent graduates to learn about their experiences at colleges and universities across Canada. We learned they were questioning the value of higher education and wanted more seamless, personalized digital experiences. Our respondents did not feel their schools were focused on their needs.

Based on the results, we developed a path to help post-secondary institutions become more student-focused. In *The case for a student-centric campus*, we shared that strategic vision, which centres on student needs and data-based decision-making.

We call this student-centricity. It's a guiding principle for institutions in which all decisions are framed around the fundamental question: **what do students need?**

# Student-centricity

On a student-centric campus, each step of the student journey is assessed, developed, and supported by considering what the students need. The primary objective is to **create positive experiences**.



One year later, we set out to revisit and expand the survey. The resulting report, which you're reading now, details what we learned and where we believe Canada's higher institutions of learning need to go, including how to get there. One thing that really stuck out in the second survey of more than 1,000 students and recent alumni: their expectations are still not being met.

We recognize that many institutions have been working to address these issues, and this report includes some case studies about their efforts. However, there is still clearly work to be done. A fundamental challenge is that many institutional structures, practices, and policies no longer align with the current needs of students. Last year, we made the case that incorporating student-centric principles is the key to meeting this challenge. Building on our vision of a student-centric campus, we now explore how technology can empower education administrators to be both more strategic and more considerate as they create a truly student-focused experience.

The first section of this report summarizes the results of our second annual student survey, conducted in the fall of 2022, while the second section provides an overview of our research into emerging technology trends in higher education. The third section connects the student insights and the technology research to explore three promising technology solutions and how they can enable enhanced experiences across the student journey. Finally, we embedded the three technologies in our student-centric framework from last year's report, illustrating that each technology impacts all five pillars for achieving student-centricity.

# A challenging landscape for the education sector

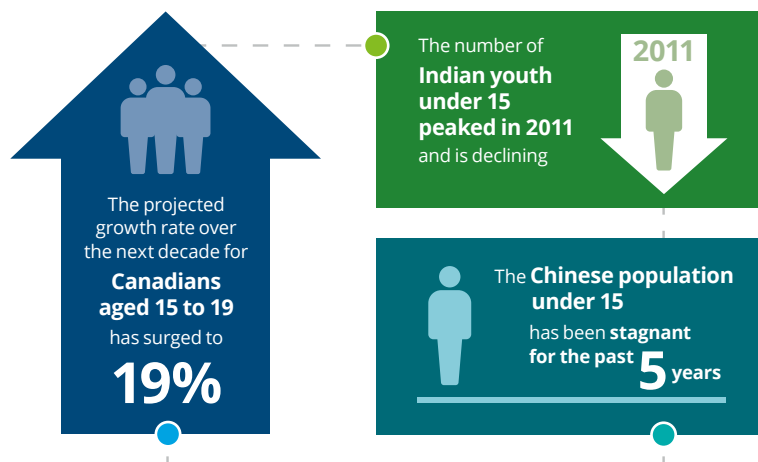
As Canada moves past the COVID-19 pandemic, the education sector is grappling with its devastating impacts on the mental health of 18- to 24-year-olds, a finding that came across loud and clear in our survey results.<sup>1</sup> And even with the pandemic largely in the rear view mirror, the societal changes that were disrupting and challenging Canadian higher education in 2021 remain: shifting demographic trends, increased competition, higher demand for certain skill sets, and declining government funding.

**Demand for higher education has been slowing** down for years. From 2012 to 2021, the growth rate of Canadians of or approaching traditional college and university age—15 to 19 years old—was

a mere 0.6%.<sup>2</sup> Over this decade of decline in domestic students, post-secondary institutions relied on international students to fill seats. Not surprisingly, competition for these international enrolments intensified.<sup>3</sup>

In the coming decade, however, institutions may need to **drastically change their planning assumptions**. The projected growth rate over the next decade for Canadians aged 15 to 19 has surged to 19%.<sup>4</sup> Meanwhile, youth populations in Canada's most important markets for international students are at risk of slowing growth rates. In India, the number of people under 15 peaked in 2011 and is still in decline, and the Chinese population under 15 has grown by only 0.7% in the past five years.<sup>5</sup>

## Youth population stats for Canada and its most important markets for international students



**Increasing investments in education by governments in international markets**

are also affecting demand. India has seen dramatic expansion in its higher education sector over the past two decades, including a four-fold increase in enrolment.<sup>6</sup>

While international recruitment will likely continue to be a success story for Canadian institutions, it may become a less dependable source of tuition, especially in the face of increased global competition for students.

Another consideration is the **steady rise in alternatives to traditional higher education**, including online, competency-based microcredentials from companies like Udemy Coursera and Udacity. Some colleges and universities are already launching their own microcredential offerings to meet changing demands for skills and retraining. A 2021 survey of over 100 Ontario colleges and universities found that more than half were offering microcredentials.<sup>7</sup> The availability of such alternative learning opportunities, in combination with a tight labour market, has also led to an increase in employers dropping requirements for formal degrees. The market for education and training has drastically changed, and the unique value proposition of colleges and universities has become more complicated in this new landscape.

The **accelerated pace of digitalization in the workplace** has resulted in the need to retrain and upskill employees to equip them with more advanced digital skills. This is changing the shape of Canada's post-secondary student

population too, with an increase in both older and part-time learners.<sup>8</sup>

The increasingly digital nature of the workforce is also changing the skills employers expect graduates to have—the Conference Board of Canada projects that nine out of 10 jobs will require digital skills within 10 years.<sup>9</sup> Our 2021 survey indicated that **students expect to have the skills needed to be successful in the workforce** when they graduate. This means post-secondary institutions must equip their students with these sought-after digital skills, even as **provincial funding has declined by 22% per student** over the last decade.<sup>10</sup>

The increasingly digital nature of the workforce is changing the skills employers expect graduates to have.

There is, however, **room for optimism**. Our research into educational technology trends indicates that intentional investments that directly impact the student experience can give schools the flexibility and capacity they need to meet the needs of an increasingly diverse student body.

While recognizing both the considerable challenges that institutions face and the efforts they're already putting in place to be more focused on students, we believe that implementing **student-centric technology is key to their future success**.

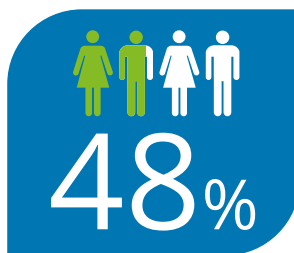
# What students in 2022 had to say

Involving more than 1,000 students and recent graduates across Canada, our second annual survey revealed insights into how they feel about their institutions' ability to meet their needs in academics, services, and technology, as well as their general experiences. Overall, the results indicated that the student-centricity challenges we identified in 2021 remain.

## Survey highlights

*As in our first survey, we asked our 2022 respondents to rate their agreement with this statement:*

**"Throughout my experience as a student, my school has been focused on and responsive to my needs."**



of students do not agree.



were less likely to agree than in our 2021 survey.

When asked about the different stages of the student journey, respondents said they consider their institutions to be least responsive in **student life**, **student services**, and the **returning alumni** stages.

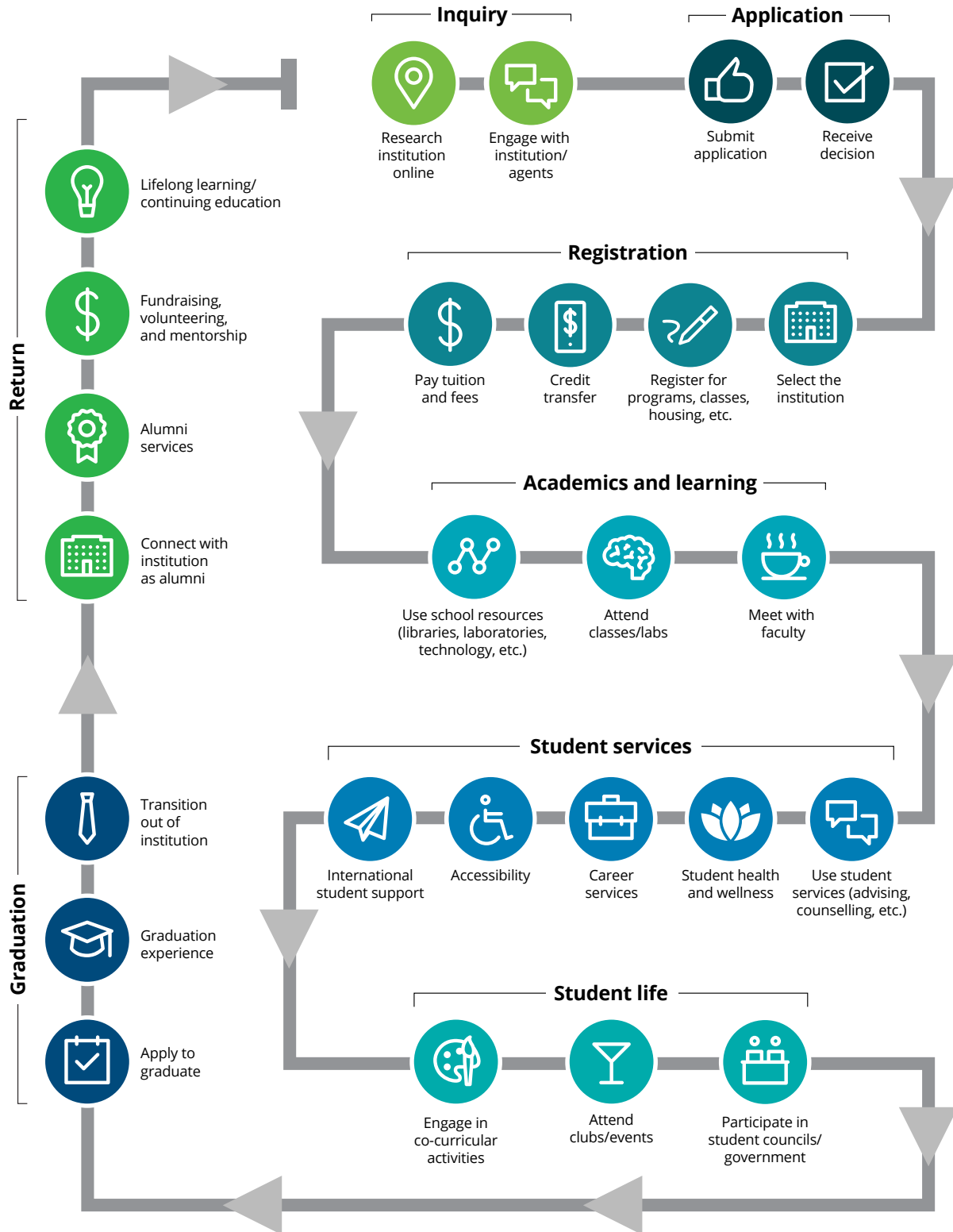


The highest-ranked stage for responsiveness continues to be the **application process**.

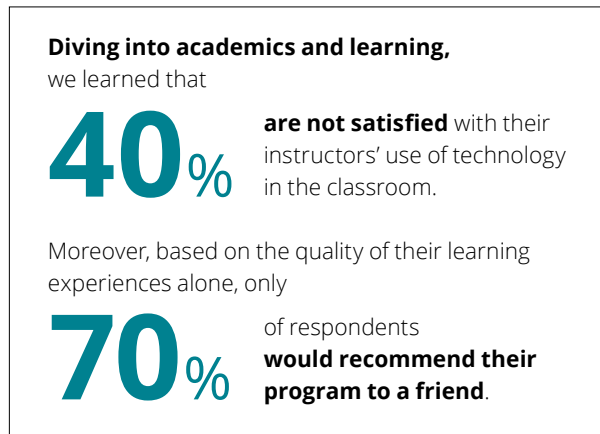
So while institutions may be making substantive investments in driving applications, **they're not yet focusing on the full journey**.



### The student journey



The 2022 survey went into more detail about the specific activities and services within each journey stage to get a better understanding of the current state of student-centricity at universities and colleges across Canada.

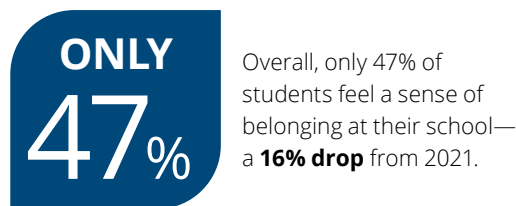


When asked which types of experiences would be most beneficial for their future endeavours, the students chose:

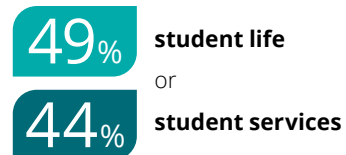
-  **Networking opportunities**
-  **Co-op internships**
-  **Group experiences**

**Another important aspect of the student experience is a sense of belonging.**

Education leaders should be aware of its pivotal role in student success, motivation, retention, and persistence, and note that thoughtful intervention can improve the gaps between different groups at their institutions.<sup>11</sup>



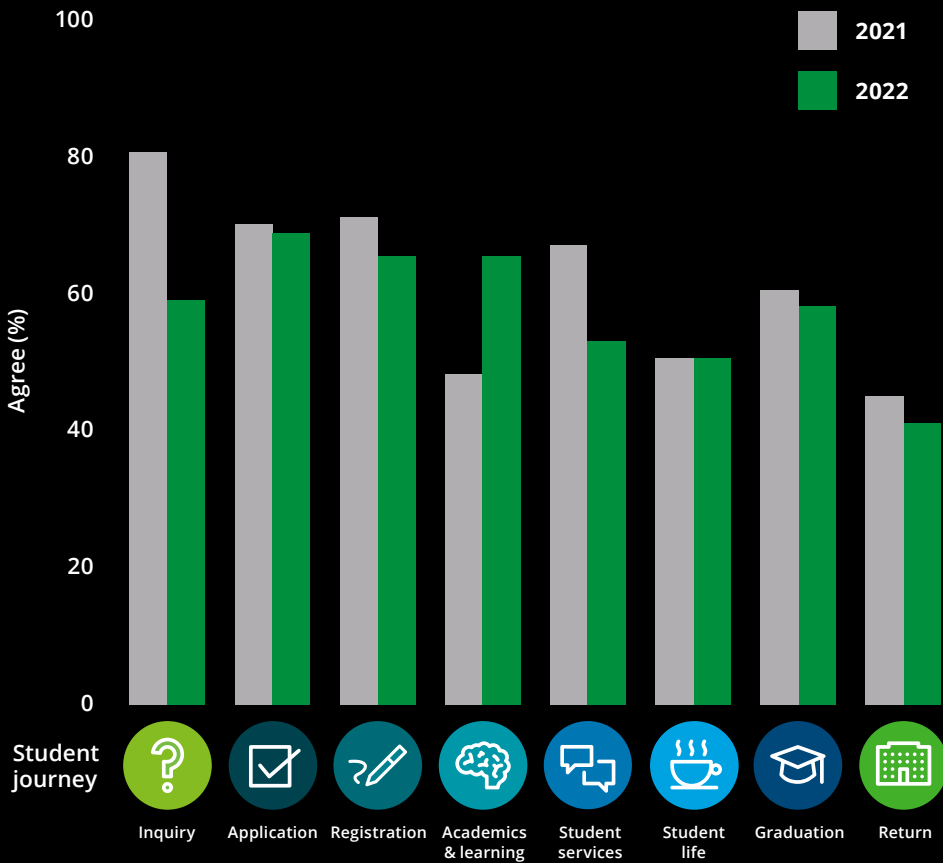
This closely aligns with the number of students who do not think their needs are being focused on in:



**Students' views of their overall journey tend to decline from the initial application phase through student life to graduation.**

The lowest rating is for the return stage, which includes all interactions alumni have with their former institutions.

**Percentage of students who agreed that the school they attend is responsive to and focused on their needs for each stage of the student journey**



# Differing experiences across the student body

In addition to indicating an overall need to better focus on student needs, the results also demonstrated how broad that set of needs is. Different populations within our sample reported large variations in satisfaction with their experiences; their responses and the data trends revealed are even more nuanced when examined separately.



## **25% of all survey respondents**

identify as having a mental health condition, compared with 12% of the general Canadian population.<sup>12</sup>



## **Only 29% of part-time students**

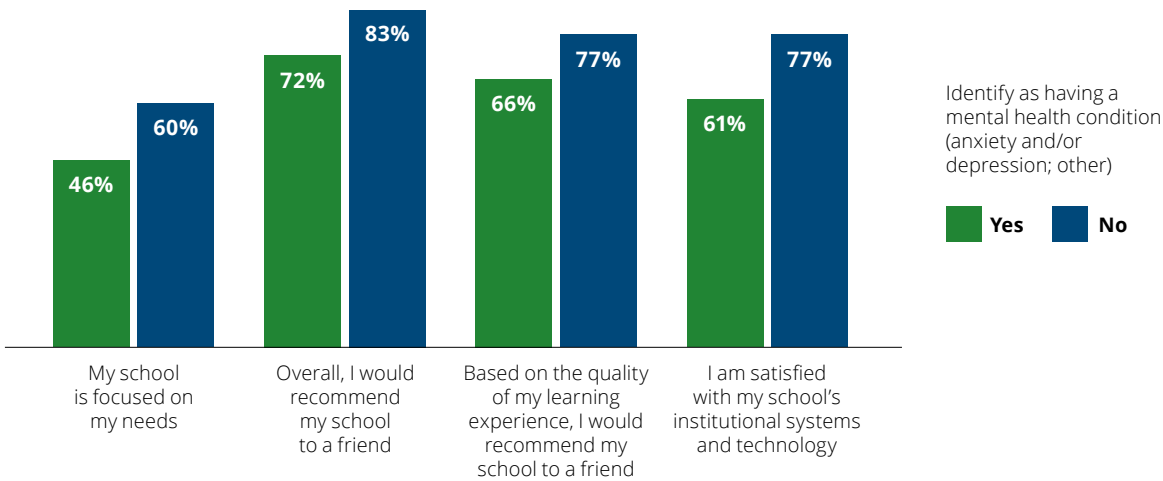
feel as though there is a vibrant campus life that they can be a part of.



## **International students**

are more satisfied with their institutions' responsiveness and their technology experiences than their domestic counterparts.

**Students living with mental health conditions reported lower levels of satisfaction across almost all elements of their education experience.** The most frequently reported conditions were anxiety and depression, and 72% of those reporting mental health conditions live with one or both.



**From experiences with teaching to interactions with institutional technology, significant differences were revealed for students with disabilities.** For instance, 45% are dissatisfied with the ease of use of their schools' digital platforms and systems, compared with 26% overall. Domestic students are also consistently less impressed than their international counterparts, and there are variations between college and university respondents across most areas.

	Domestic vs. international		University vs. college	
My school is focused on my needs	51%	61%	53%	54%
My lecturers teach in an engaging manner	67%	74%	66%	62%
My program includes elements of experiential learning that are beneficial to my experience	59%	64%	60%	69%
My program is current with real-world needs	66%	62%	65%	46%
I am satisfied with my school's institutional systems and technology	67%	79%	68%	77%
I am satisfied with my institution's efforts to develop my digital literacy	53%	68%	54%	77%
I am satisfied with my instructors' use of technology	58%	72%	60%	69%

### Year-over-year changes









Comparing our 2021 survey responses with those in 2022 raised a lot of interesting questions about how schools handle their students' experiences and expectations, particularly in light of the drastic shifts to and from remote learning and the widespread adoption of hybrid learning.

We received some significantly different responses when we asked students **whether they agree their institutions are focused on and responsive to their needs at different stages of their experience.**

Across the overall student journey, 5% fewer respondents agreed in 2022. The year-over-year changes for the different stages were varied and largely negative.

Another significant change was in students' sense of belonging. In our 2021 survey, 63% agreed they felt a sense of belonging at their college or university. One year later, that number had dropped by 16%, to 47%. This indicates that student-centricity needs to be a higher priority for the leaders of these institutions.

When we challenged ourselves to provide a rationale for the decline in results in 2022, we found several likely contributors. Our larger sample size in 2022 could be giving us a clearer picture of student sentiments. It could also be down to the effects of the return to the classroom—some respondents who have been enrolled for two years were only just getting to set foot on campus. Whatever the reasons, it's clear that students' perceptions aren't as positive as institutions would like them to be.

Student journey stage	Agreed in 2021 survey	Agreed in 2022 survey	YOY change
Inquiry	72%	59%	 (13%)
Application	79%	68%	 (11%)
Registration	71%	65%	 (6%)
Academics and learning	71%	65%	 (6%)
Student services	67%	56%	 (11%)
Student life	63%	51%	 (12%)
Graduation	43%	58%	 15%
Return	39%	41%	 2%

### Summary

Our survey results highlighted the broad range of needs that institutions should address to best support their students. We understand how complex a task that is. Fortunately, our research into technology trends in higher education showed there are tools that are directly improving the student experience and empowering administrators to meet the needs of an increasingly diverse student body.

Despite the challenges mentioned so far, student-focused implementations of innovative technology offer promising opportunities for institutions to provide students with the experiences they value, from the inquiry stage through to their return. In the following pages, we'll describe in more detail how Canada's higher education institutions can use modern technology to boost their student-centricity.

# The higher education technology landscape

In our 2022 survey, students told us they expect personalized learning experiences that prepare them for their careers. They also expect seamless digital experiences at school, although the variation in responses from different groups represents the breadth of needs that institutions must address.

These insights led us to comprehensively research industry-leading trends in higher education technology and then explore the solutions that have strong potential to empower Canada's colleges and universities to improve the experience they offer students. In addition to tech trends, we researched general trends in the education sector to identify opportunities to address them using the latest technologies.



## Key trends

<b>Immersive learning technologies</b>	<ul style="list-style-type: none"> <li>• Virtual and augmented reality (VR/AR)</li> <li>• Hybrid/hyflex learning environments</li> <li>• Specialized web-conferencing tools</li> <li>• Total experience solutions</li> </ul>
<b>Embedded privacy and cybersecurity</b>	<ul style="list-style-type: none"> <li>• Security measures are deeply integrated throughout student and administrator experiences</li> </ul>
<b>Advanced curriculum management systems</b>	<ul style="list-style-type: none"> <li>• Adaptive course catalogue maintenance focused on skills and employment outcomes</li> <li>• Academic portfolios focused on student employment outcomes and responsive to market demand for skills</li> <li>• Lifelong learning and alternative credentials</li> <li>• Curriculum and instructional design alignment to the future of work</li> </ul>
<b>Enhanced data analytics capabilities for evidence-based decision-making</b>	<ul style="list-style-type: none"> <li>• Insights into the student experience</li> <li>• Enrolment expansion and identification of high return on investment programs</li> <li>• Student academic outcome improvements</li> <li>• Measurable outcomes for diversity, equity, and inclusion initiatives</li> <li>• Learner analytics and adaptive learning</li> </ul>
<b>Composable IT strategies and application modernization</b>	<ul style="list-style-type: none"> <li>• “Composable” IT strategies that support agility in updating IT architecture</li> <li>• Next-generation student information and customer management systems</li> <li>• User-centric design in institutional applications/portals</li> <li>• Risk management and enterprise resource planning (ERP) investment value</li> <li>• Automated learner engagement metrics</li> </ul>
<b>Increased IT support and connectivity</b>	<ul style="list-style-type: none"> <li>• Adaption of IT support and bandwidth capabilities to meet the needs of remote and hybrid institutions</li> </ul>
<b>Advanced blockchain applications</b>	<ul style="list-style-type: none"> <li>• Transcript process advancements, such as interoperable learner records and better security</li> </ul>
<b>Innovative chatbot and artificial intelligence/ machine learning (AI/ML) advances</b>	<ul style="list-style-type: none"> <li>• Student self-serve option enablement</li> </ul>
<b>Low-code applications enablement</b>	<ul style="list-style-type: none"> <li>• Non-developers can build institution-specific functionality using graphic user interfaces and drag-and-drop environments</li> </ul>

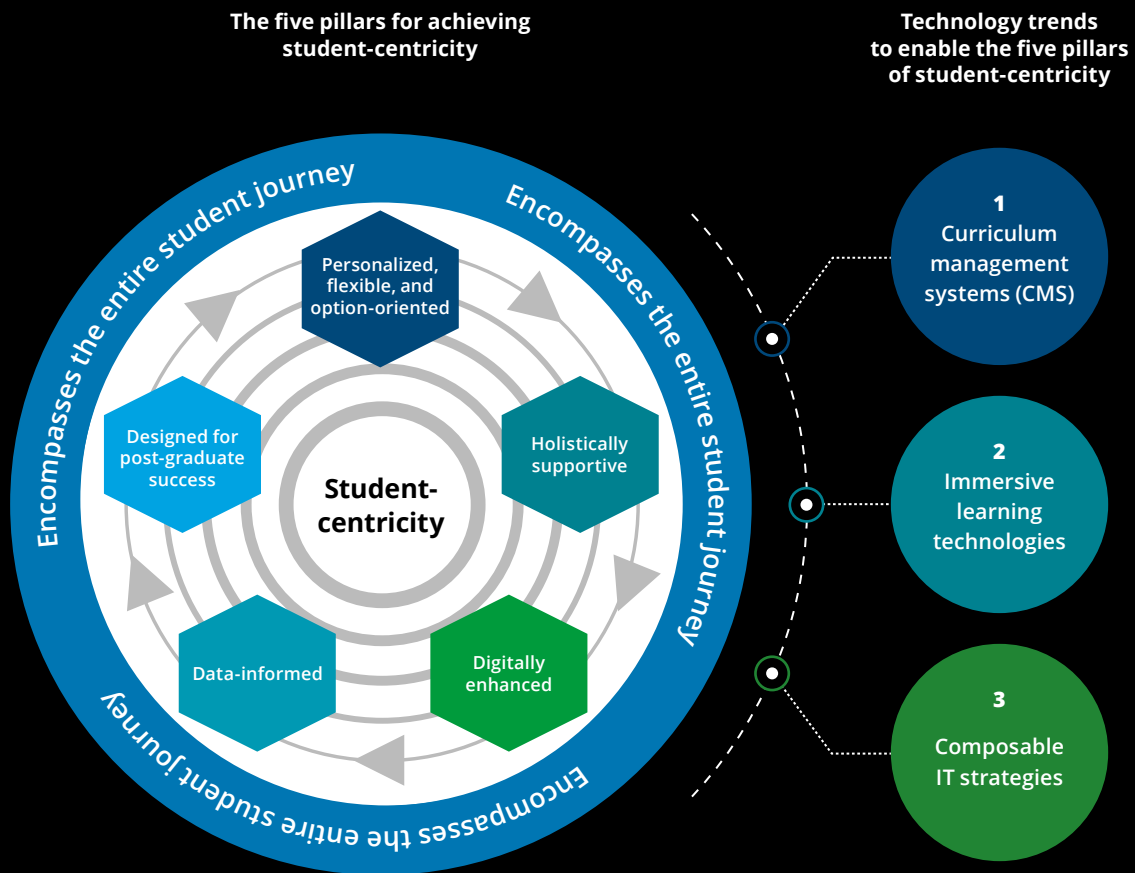
### Sources

- Hanover Research, *2022 Trends in Higher Education*, 2022.
- World Economic Forum, “4 trends that will shape the future of higher education,” 2022.
- EDUCAUSE, *2022 EDUCAUSE Horizon Report*, 2022.
- The Education Outlook, *Higher Education's Top 10 Technology Issues and Trends in 2022*, 2022.
- Gartner, *Top Priorities, Technologies, and Challenges in Higher Education for 2023*, 2023.
- OECD, *Education at a Glance 2022*, 2022.
- EdTech, “Higher Ed IT Leaders Discuss 2023 Tech Trends,” 2022.



# Three technologies to improve the student experience

We analyzed the key trends mentioned above to see where they might be used to solve the issues that students shared in our survey. We then selected the three technologies that we think have the strongest potential to help education leaders fill some of the gaps we identified and better meet the expectations of their students. The diagram below is our student-centricity framework introduced in our 2022 report, *The case for a student-centric campus*. The purpose of the framework is to help leaders develop a clear understanding of what student-centricity looks like in practice.



**1**  
Curriculum  
management  
systems (CMS)

Software systems that facilitate the curriculum life cycle, ensuring course catalogues stay up to date with in-demand skills, and refining or replacing curricula where they are not.

**Student concerns it can help solve:**

- Innovative teaching—51% of students don't think teaching methods are innovative
- Currency with real-world needs—45% don't think their curriculum is up to date

**Student-centricity potential:**

- Allow for more efficient curriculum design and updates
- Keep up with students' desired learning outcomes
- Empower students to customize their learning paths
- Help program coordinators understand and improve student engagement

**2**  
Immersive  
learning  
technologies

A set of tools that facilitate engaging learning experiences using an experiential blend of content and technology.

**Student concerns it can help solve:**

- 40% of students aren't satisfied with instructors' use of technology in teaching
- 40% don't feel they're getting the benefits of experiential learning

**Student-centricity potential:**

- Provide opportunities for experiential learning at a lower cost than traditional approaches to experiential learning
- Enable better hybrid/hyflex teaching and learning environments

**3**  
Composable  
IT strategies

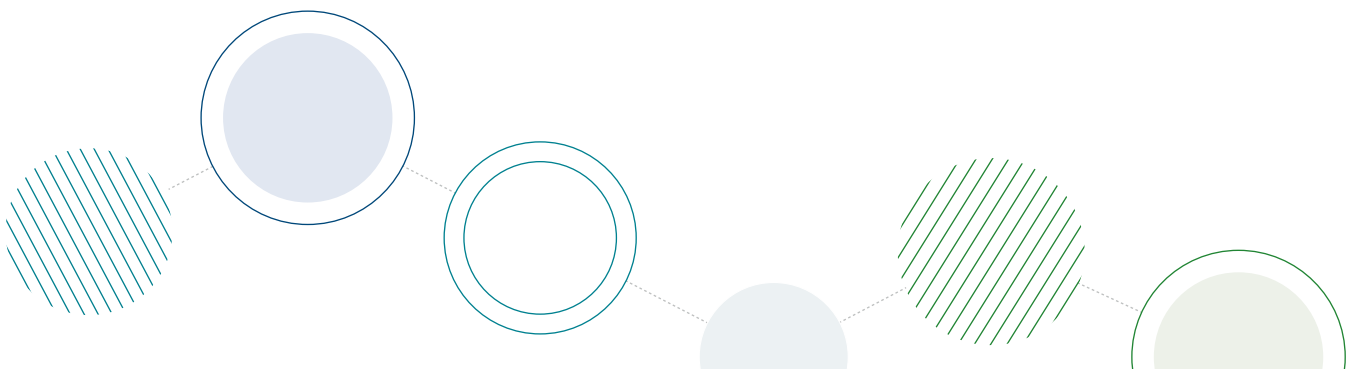
A technology strategy consisting of a core of composable applications and software as a service (SaaS) platforms that are configurable, interoperable, and flexible to adapt to changing needs and tech advances.

**Student concerns it can help solve:**

- 44% of students don't think institutions are sufficiently focused on their needs in student services

**Student-centricity potential:**

- Facilitate the adoption of modern applications that directly influence the student experience through flexible IT infrastructure



**Let's break down the three technologies highlighted above and their game-changing potential for schools and students alike.**

**1  
Curriculum  
management  
systems (CMS)**

CMS software facilitates the curriculum life cycle and, in combination with supporting institutional policy and culture, can ensure that curriculum catalogues stay up to date with in-demand skills—and refine or replace them where they are not. Leading CMS technologies serve four primary functions:

1. Publish course catalogues
2. Develop and launch new curricula
3. Facilitate course scheduling and faculty workload
4. Support student registration

**Why we think it's important**

A CMS has a lot of potential to enable and strengthen the process of orienting learning toward employment outcomes and skills-based training in response to market demand, a widespread trend in higher education. While it has overlapping functionalities with learning management systems (LMS), we chose CMS technology for its potential to address gaps in lifelong learning, responsive curriculum design, adaptive learning, and learner analytics. While not intended as a replacement for an LMS, it offers an opportunity for education leaders to strengthen their institutions' ability to embrace new ways of learning.

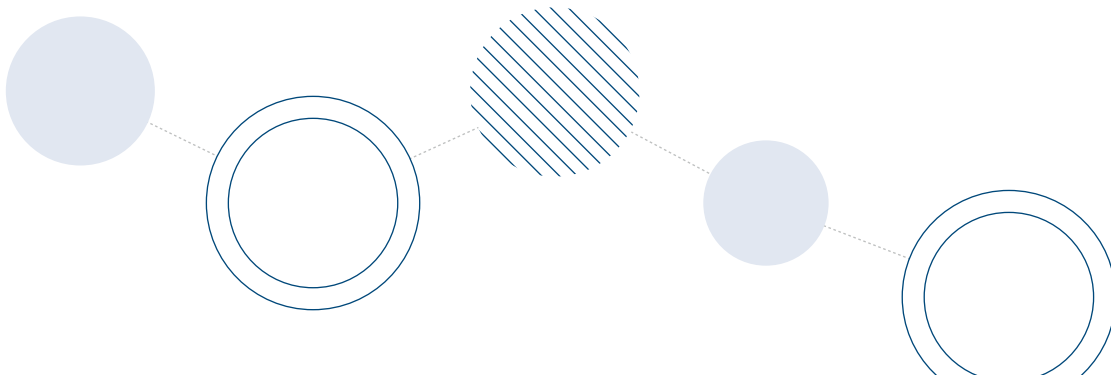
Education chief information officers (CIOs) are already seeing the value in this new tool for rapid curriculum development. Gartner CIO surveys estimate that 51% of institutions have already invested in CMS, 12% will invest in the next year, and 24% plan to invest within the next three years.<sup>13</sup>

Committed investments in CMS implementations should be reassuring news for students as they will help bridge some of the gaps uncovered in our survey, such as the need for up-to-date industry curricula, modern interfaces, and tailored learning paths to help them with their career prospects.

**How it connects to students' feedback**

The experiences students expect to have with academics and learning are shifting. Common themes in the long-form responses we collected show they want seamless, flexible curriculum-mapping, with courses that are regularly reviewed to enable more industry-responsive learning.

The experiences students expect to have with academics and learning are shifting.



**Students want:**

- Curricula with content “similar to what companies use in real life”
- “Programs that are more practical than theoretical” and “reflect changing industry trends”
- “More flexibility and clearer instructions on what courses [they] should take”
- “Regular checks on the materials being given out by teachers to ensure relevancy and accuracy”



A CMS offers the collaboration and integration capabilities to support curricula that are more responsive to current industry standards. Using traditional methods to iterate on curricula, build industry partnerships, and teach practical competencies that enable success in the workforce is time-consuming. A CMS can reduce the administrative burden of managing the curriculum life cycle through automation and integration, giving faculty and administrators more time and space to focus on adapting course material to better support evolving student needs.

**How it can boost the student experience**

A CMS can be used to create more positive experiences at every stage of the student journey. From their first contact with an institution, a CMS-developed course catalogue engages prospective students by allowing them to visualize their potential learning experience if they were to register for a particular program.

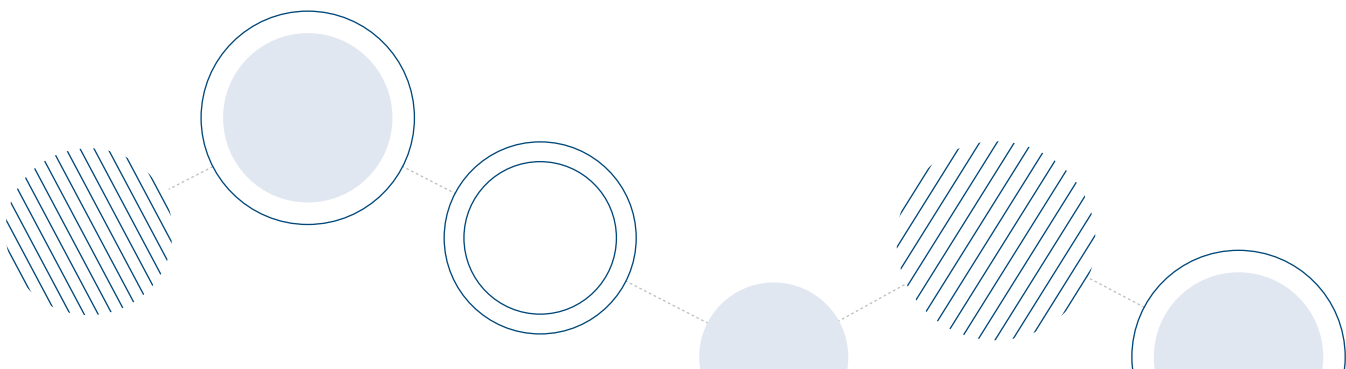
For current students, a leading CMS can optimize their experience in the academics and learning stage by facilitating registration through an intuitive course catalogue's search functionality, degree requirements, and course prerequisites. Its engaging user interface simplifies registering for classes, monitors academic progress, and encourages students to explore various learning pathways.

A CMS also allows for interdepartmental collaboration through automated workflows that track changes and reference work archives. Integrations with ERP systems can be used to enable course scheduling and manage faculty workloads based on institutional data such as room and faculty availability.

It can also improve an alumni's return experience by promoting and facilitating lifelong learning.

By streamlining the curriculum development and launch process, a CMS enables institutions to offer nontraditional learning paths such as micro-credentials and competency-based education that are aligned with market demand. In essence, it fosters institutional responsiveness.

When an institution invests in a CMS, it's investing in a solution that streamlines curriculum management. It can also embed processes for more structured reviews that institutions can leverage to promote student-centric learning. Students benefit from the development of new course material being delivered in user-friendly formats with intuitive self-service user flows. This fosters positive learning experiences that are comparable to other user-centric products in the market today.





AGE	18
ROLE	First-year student

### What a student-centric implementation looks like

## First-year student Tyson

### Tyson's story

#### Imagine a first-year student who has not yet declared a major.

His name is Tyson, and he's on his phone, reviewing the course catalogue through an interface that's attractively branded and intuitive to use.

With one click, he can get an overview of any course and the prerequisites for registration, and easily explore degree pathways related to the course from there. The system is integrated with his school's student information system (SIS), so his eligibility for the course is already displayed, along with whether it will contribute to his current degree and how it fits into his existing schedule.

In the last few months, Tyson has become more familiar with a programming language called Python, and is increasingly interested in a career as a developer. When he uses the catalogue's *search by career* function

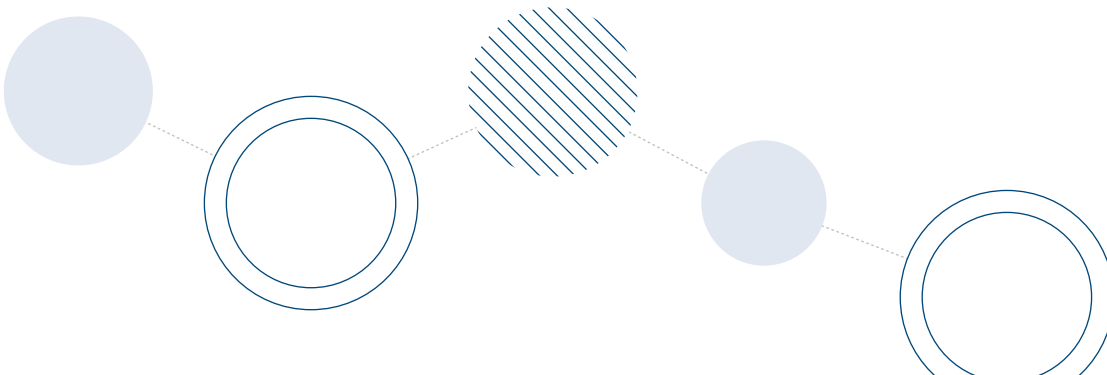
to look for courses related to *developer*, the school's portfolio of coding classes is displayed, so he can easily get to all the helpful details described above.

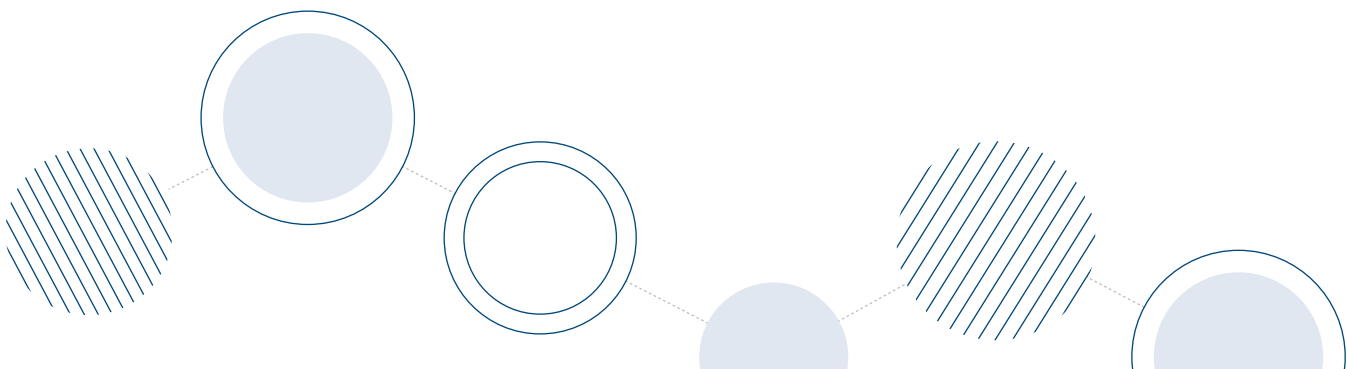
As he continues his search of the course catalogue, the system makes suggestions on potential learning paths based on his search history, the classes he has completed, and the extracurricular activities he's involved in.

Tyson uses the chatbot function to ask a question about one of the prerequisites for a course he's interested in. If the chatbot can't answer it, he is connected to a live advisor and can set up an in-person appointment if he wishes. He then selects and registers for the courses he's most excited about, and his timetable and academic record are automatically updated. The course syllabus and other helpful details are available to him immediately.

### A Canadian example

Georgian College implemented CourseLeaf curriculum management software to streamline its process for new program and course submissions. The result is an automated system with a single source of documentation for the school's course catalogue, and full transparency for the institution, external curriculum approval bodies, and automated approval processes. A leader in cooperative education and experiential learning, Georgian's improved CMS enables the learning experiences students are looking for to prepare them for their careers.<sup>14</sup>





## 2 Immersive learning technologies

Using an experiential blend of content and innovation, immersive technologies can be used to cultivate a co-learning environment where learners actively contribute and are given licence to explore alternative content and approaches. Leading examples of immersive technologies include the use of augmented and virtual reality for experiential learning. They're part of a larger umbrella of educational technologies (edtech) that facilitate or improve the learning experience for students by enhancing traditional pedagogical approaches.

### Why we think it's important

Immersive technologies can be harnessed to create unique and transformative learner experiences. As part of the evolution of higher education instruction, these technologies can increase student agency and expand the ways in which learners can engage with each other and with faculty.

The increasing adoption of these technologies reflects their potential as a lynchpin for creating student-centric experiences across different learning environments. They also increase accessibility and offer opportunities for experiential learning at a lower cost than traditional approaches to experiential learning.

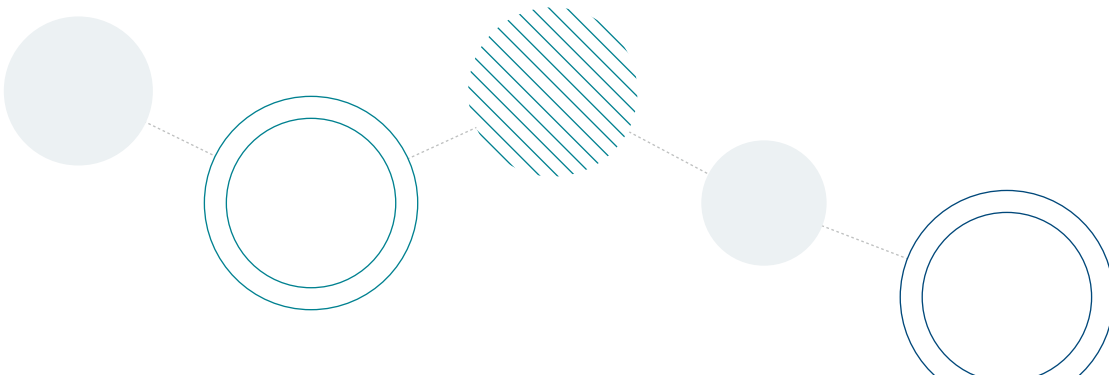
While most institutions have returned from fully remote instruction, hybrid and hyflex models of teaching are here to stay. Immersive technologies enable these types of learning with synchronous remote and in-person learning.

As Gartner noted in its report on global trends in education, "The 'hybrid world' trend is refined to the more specific 'digital learning environments,' reflecting the need to think in multiple dimensions about how, when, and where learning takes place."<sup>15</sup>

### How it connects to students' feedback

Students have high expectations for seamlessness in their digital experiences, requiring institutions to invest in technologies for classroom video, audio, and content capture.<sup>16</sup> Our survey revealed that 40% of today's students are not satisfied with their instructors' use of technology in their teaching methods.

Students' experiences with technology can affect brand and net promoter scores. Based on the overall quality of their learning experience, 30% of our respondents would not recommend their institution. Students are asking for more innovative, practical, and interactive learning that accommodates different needs. In the long-form responses we gathered, some common themes emerged that could be addressed using immersive tech.



**Students want:**

- “More hands-on classes”
- “More robust, alternative methods for accommodating students with disabilities that go beyond extensions, notetaking, and assistive devices”
- “Innovative ways of teaching”
- “Teach more practically, less theoretically”



Immersive technologies help to level the playing field and create a collaborative, participatory environment where learners engage with both the content and their peers—and the role of the instructor shifts to that of a facilitator.

When used well, immersive classroom technologies can help learners share their perspectives and direct them to alternative content that can both substantiate and expand on the material being shared in the classroom. They not only support diverse perspectives, but also offer students the opportunity to engage with their course material in dynamic and interactive ways.

**How it can boost the student experience**

While students can interact with and benefit from immersive technologies throughout their post-secondary educational journey, starting with their informal research about their institution as prospective students, the value of such tech is most clear in the academics and learning stage.

Understanding that they are designed to facilitate greater learning across different environments is key to the successful use of immersive tools. Using them in a way that caters to the needs of students is an opportunity to give them tailored experiences where technology is embedded within pedagogical objectives.

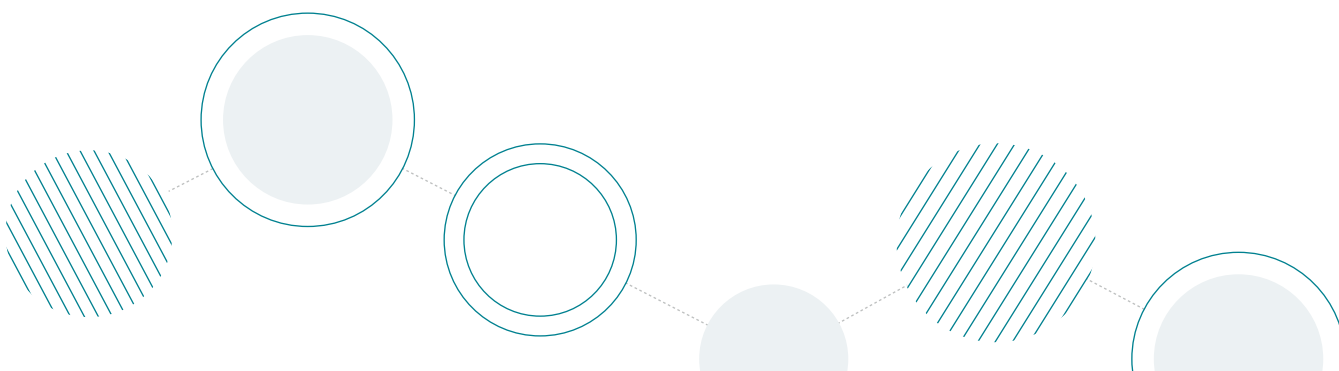
Immersive technologies should be seen as tools to achieve better learning outcomes, rather than products in themselves. While a CMS can reduce administrative burden by freeing up time and space for updating curricula, immersive tech can do so much more. It enables accessible, flexible, and

experiential learning and engages students with experts, mentors, and professionals in relevant sectors/business communities.

While exploring the capabilities of new teaching and learning technologies is important, our work in this space revealed that students expect the modalities their institutions use to be fit for purpose and to prioritize their individual experiences. Virtual spaces are well suited for absorbing material and are invaluable for dynamic and engaging problem-solving, experimentation, and teamwork.

As more and more high-tech teaching solutions become available, they will need to be used with intention and emphasize pedagogy, accessibility, and student well-being. To maximize the full potential of their investments, institutional leaders will also need to invest in training and development to ensure instructors are prepared to effectively integrate immersive technologies into their teaching.

Virtual spaces are well suited for absorbing material and are invaluable for dynamic and engaging problem-solving, experimentation, and teamwork.







AGE

22

ROLE

Third-year student

### What a student-centric implementation looks like

## Third-year student Mia

### Mia's story

**Imagine a third-year student who is working on a research assignment.**

Mia's instructor has broken it down into multiple submissions to allow for summative feedback. Once Mia submits the first draft of her abstract into her institution's LMS-enabled chat function, she receives an interactive critique.

Mia then moves to the embedded Padlet application, where the class has been requested to anonymously submit two sentences explaining their proposed topics, including a link to a digital resource and another to a multimedia resource. The board has an interactive function that welcomes students to add their thoughts and additional media to their posts.

Our student gets an email notification alerting her that the instructor has uploaded a recorded mini-lecture and

invited her to sign up for an AR/VR lab that's being hosted later that week by experts from a relevant industry. Once Mia signs up, a link to join the lab pops up on her device from the chatbot plugin.

Mia goes back to the Padlet board and clicks on one of the resources her colleagues suggested under her post. It opens a Pressbook—an open education resource (OER)—which she can explore it in its entirety, free of charge.

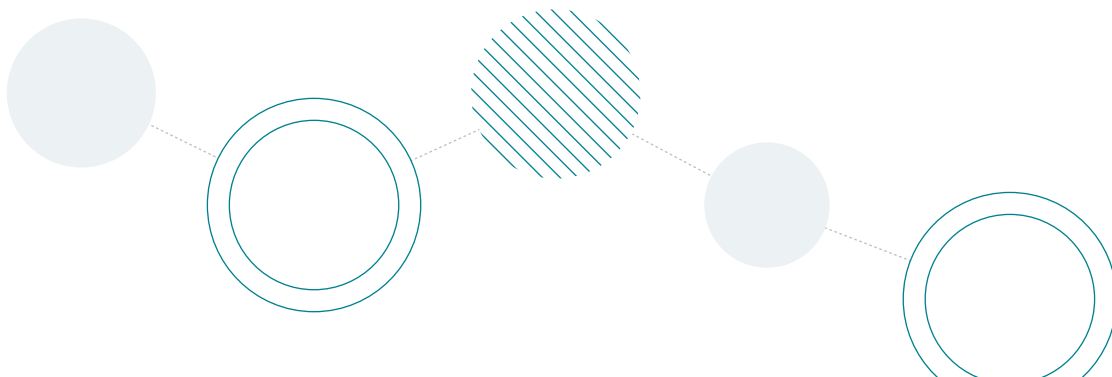
Every tool Mia encounters has been thoughtfully inserted to create a dynamic, personalized learning experience for her that's enhanced by AI, the instructor-curated repository, feedback from colleagues, and the accessibility and affordability of open-source resources.

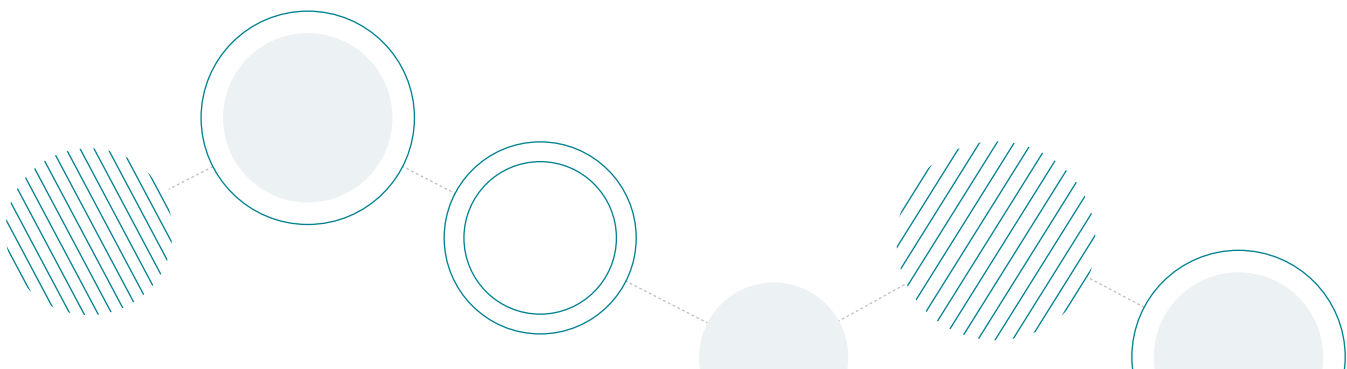
### A Canadian example

"Students can tap on flags to read about different soil orders, view images, and take a self-study quiz to reinforce their understanding. The instructor can customize content with the supplementary editor app."

Using augmented reality, instructors of the University of British Columbia's Introduction to Soil Science course now offer a learning experience where students learn about the effects of topography on the formation of different soil types in an immersive setting.

The school's Emerging Media Lab developed two apps to make this possible. The first, called Soil TopARgraphy, allows enrolled students to view and manipulate a terrain model of the Kamloops region of British Columbia. Through a second editing app, instructors can update information such as soil locations on the terrain models and in all descriptions, images, and quizzes.<sup>17</sup>





3  
Composable  
IT strategies

A composable IT strategy is one in which an organization's digital infrastructure consists of interchangeable and connected "building blocks" of applications and SaaS platforms. These applications and platforms are highly flexible and enable the adoption of evolving technologies at a faster pace than traditional IT strategies.<sup>18</sup> This ultimately allows institutions to better meet students' expectations for seamless digital interactions.

A composable IT strategy encompasses all of an institution's systems, across SIS, ERP, constituent relationship management (CRM), and more. Most leading solutions are cloud-hosted and implemented with a degree of flexibility and configuration that's supported by low-code or no-code architecture. They're built with big data access and usage in mind. With students and administrators engaging with data sourced from numerous institutional systems, an essential building block of a leading strategy is a platform that connects the user experience of each system into one intuitive interface. The composable strategy mindset is building an IT infrastructure that is fit for the purposes of today, but with the flexibility to adapt to changing needs over time, enabling institutions to become more student-centric.

**Why we think it's important**

We selected this trend because of its potential for empowering institutions to be more user-centric and improve students' digital experiences. Even as some schools are undertaking digital transformations to adopt new technologies and adapt to shifting preferences, the underlying drivers of transformation are accelerating. The accelerated growth of artificial intelligence and connected devices is rapidly improving user experiences with technology.<sup>19</sup> The flexibility and modular structure of a composable IT strategy enables institutions to extend and replace applications as the underlying technologies continually evolve.

There's no doubt that the user experience is greatly improved by a composable IT infrastructure accessed through a single interface and adaptable enough to change with student needs. This model has proven itself in most customer-centric industries that students are used to interacting with. But while CIOs will see the merit in investing in this trend, they will face the challenge of describing that merit to key decision-makers at their institutions. This challenge is particularly difficult when factors such as ongoing licensing costs, data residency, and machine learning enter the conversation. They should keep the focus on the student experience, while also highlighting the measurability of the outcomes. If faced with resistance to adoption, CIOs will need well-thought-out cost and change management strategies that demonstrate the positive return on investing in composable infrastructure.



### How it connects to students' feedback

Many students find it challenging to navigate their institutions to get the services and support they need, which gets in the way of balancing learning and other commitments. As noted earlier, 44% don't think their institutions are sufficiently focused on providing services to them.

In the past few years, universities and colleges have had to flip almost all operations to become fully remote, and then flip them again for a hybrid online/on-campus environment. These changes required massive effort and the use of IT infrastructure capable of handling both academics and student services online. But our survey data demonstrates that students' expectations for services are still not being met. While satisfaction with the ease of using digital platforms varies widely across student groups, it's especially low among those with disabilities.

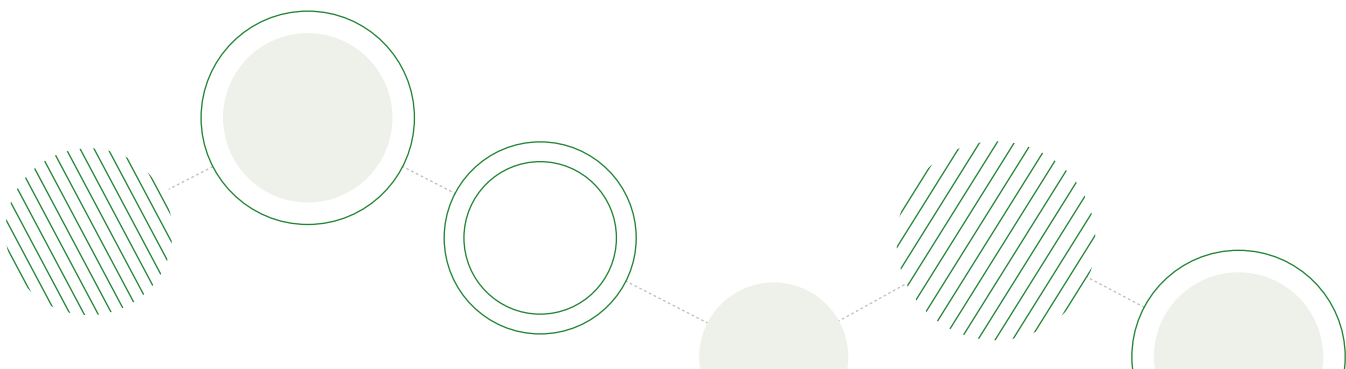
Common themes that emerged in the long-form responses we collected show that student-centricity starts with the basic services they access day to day, especially for those with disabilities.

#### Students want:

- "A better interface for the online profile and account. Make things intuitive and easy to understand, right from the starting page."
- "More accessibility for students with disabilities and not so many hoops to jump through."



Composable IT strategies give institutions the agility to transform the systems that determine the quality of students' interactions with institutional technology. This agility empowers schools to adapt their systems to achieve more student-centric capabilities. Harnessing these opportunities can help them to provide better services and be more responsive as student needs continue to change.



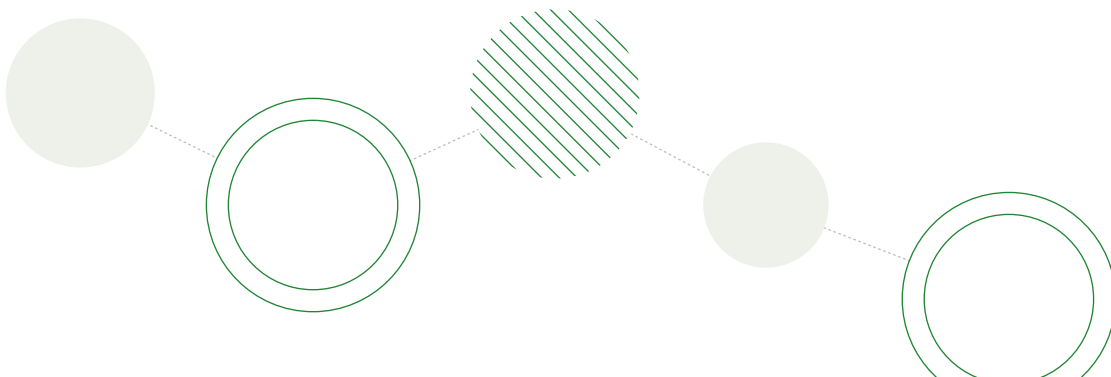
### How it can boost the student experience

Composable IT strategies encompass all of an institution's digital systems. To demonstrate the impact of composable applications on the student experience, let's look at the benefits from the perspective of ERP, which is especially important for student service delivery. As the backbone of an institution's IT infrastructure, a leading composable ERP system affects the quality of students' experiences with institutional technology both directly and indirectly. It allows the institution to adopt the applications and software that are most effective for their students, at lower costs and with less disruption, because it can adapt to and incorporate new applications more efficiently than traditional ERP systems.<sup>20</sup>

#### Some of the biggest benefits are:

- **The automation of administrative tasks**, such as registration and financial aid processing, frees administrators to focus on more value-add activities in providing student services, since their workload for otherwise basic but high-volume tasks is reduced.
- **Centralized communication** platforms ensure students and staff have a one-stop shop for all essential information. As applications for enhancing student communication, such as chatbots, continue to evolve, students will gain more intuitive, self-serve options for quickly finding answers to their questions. This will bring student services more in line with their expectations for the same types of digital services they access in their day-to-day lives.
- **Tailored services** can be enabled by the tracking of data. With a centralized view, institutions can improve and personalize services as their understanding of student needs increases. This is particularly important for populations that have accessibility needs or require better access to health services, including mental health support. Our survey data demonstrates that those with needs that differ from the general population are having poorer educational experiences, so offering tailored services based on a centralized view of rich student data is a potentially ground-breaking means to address their needs and deliver better experiences.
- **Enhanced analytics** on enrolment, retention, and student success allow institutions to adopt and evolve their applications for collecting academic data and make use of advanced data analytics. This information helps institutions to make practical, data-driven decisions to meet the needs and expectations of their students.

Serving as the backbone of an institution's IT infrastructure, a leading composable ERP system affects the quality of students' experiences with institutional technology both directly and indirectly.





AGE

51

ROLE

Chief Academic Officer

### What a student-centric implementation looks like

## Chief academic officer Maria

### Maria's story

**Imagine a chief academic officer sitting down with a group of other senior administrators for their annual review of progress on the school's strategic commitments to improve the student experience.**

They're about to review a series of dashboards with metrics on student outcomes and perceptions. The ERP system has integrated and analyzed data from a variety of student departments for each dashboard.

The first dashboard the team sees is about early warning signs for at-risk students. Using predictive analytics, the system has identified those who may be at risk of dropping out. The team assigns academic advisors to reach out to them. The dashboard also shows that 500 students have already had such appointments and, just one year after this practice began, dropout rates have declined significantly.

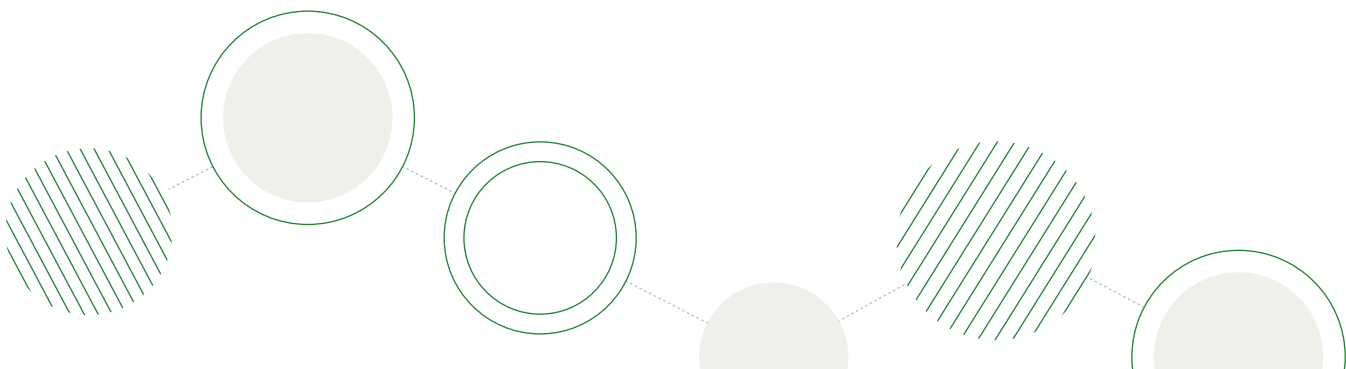
The team then reviews students' feedback on registering for classes. When students complete their registration through a portal, they're prompted to rate their experience and provide feedback. In last year's review, the team was made aware that students with visual impairments were struggling to use the portal. The school then engaged its ERP provider to optimize accessibility on the interface. The team is happy to learn that the average rating for user experience in the portal this year is already up 10%, and none of this year's feedback indicates issues around its accessibility.

After reviewing metrics on each strategic commitment, Maria and her team set new targets for the coming year and creates a shortlist of strategic initiatives to support reaching each one.

### A Canadian example

"The learner is at the centre of all our decisions here at the college, even in our back-office functions."

Back in 2019, Algonquin College implemented Workday's cloud-based human capital management (HCM) and payroll ERP system. In 2020, the college continued its digital transformation by extending this ERP system with Workday Adaptive Planning to replace their legacy budgeting solution. Algonquin chose this platform for its flexibility, usability, and scalability. Their goal was to modernize their budgeting and forecasting processes with a platform that would integrate with their existing ERP and legacy SIS. Its analytical capabilities enabled administrators to analyze financial data side by side with enrolment data, and to model scenarios to support the organization's student-centric mission. The results of the transformation include improved processes for budgeting and reporting that support "decisions that will ultimately impact the services we can offer to our learners."<sup>21</sup>



# Conclusion

Even with the return to campus in 2022, our survey results indicate that students' expectations are still not being met. A key observation from last year's report on student-centricity still holds true—many institutional structures, practices, and policies no longer align with the needs of students. Institutional systems need to evolve to provide more intuitive, impactful support to students.

Our research into emerging tech trends revealed a range of investments that can directly improve the student experience. However, to be truly student-centric will require highly intentional implementation of these technologies. Focus will need to be given to the broad and changing needs of an increasingly diverse student body.

To the leaders of Canada's colleges and universities: we understand that transforming your institution to meet the needs of all your students is an immense challenge requiring investment in turbulent financial times. But we think that challenge must be taken up to continue demonstrating the value of investing in higher education. Our hope is that the technologies outlined in this report will inspire you with their innovative solutions and opportunities. As you think about where your institution stands on the journey toward student-centricity, we'll leave you with these important questions:



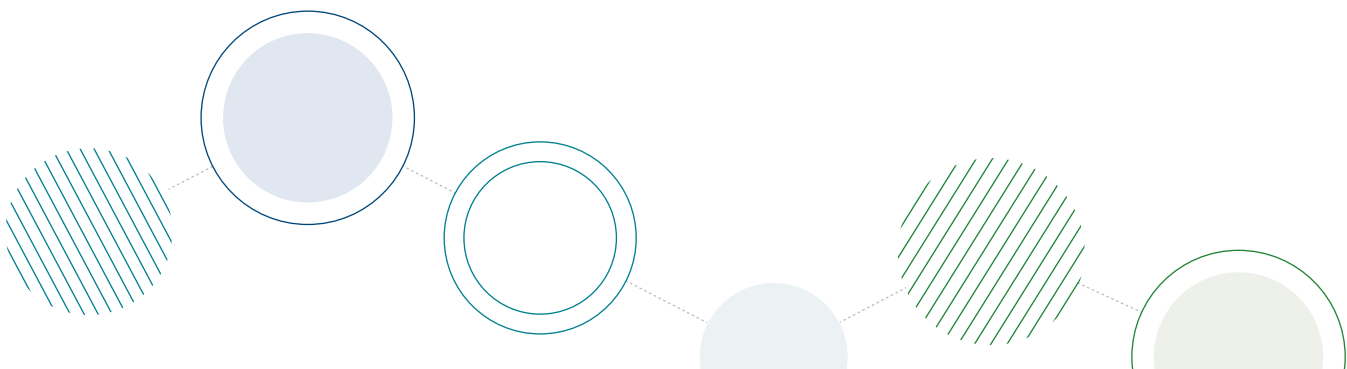
Do you have an understanding of how student-centric your institution is across the entire student journey? If so, how is it measured? If not, how will you measure it?



Do you understand the diversity of your students and how this shapes their experiences? And how do your institutional technology plans aim to address the diversity of their needs across different experiences?



Are you implementing your technology plans with a focus on the needs of students across their journey with your institution?





# Endnotes

1. Inside Higher ED, "Mental Health Needs Rise With Pandemic", September 11, 2020.
2. Statistics Canada, "Projected population, by projection scenario, age and sex, as of July 1 (x 1,000)," accessed January 23, 2023.
3. Alex Usher, "Canada's growing reliance on international students," Policy Options, August 29, 2018.
4. Statistics Canada, "Projected population."
5. Statista, "Age distribution in China from 2012 to 2022," Feb 28, 2023; Our World in Data, "India's population growth will come to an end: the number of children has already peaked", January 15, 2019.
6. Shamika Ravi, Neelanjana Gupta, and Puneeth Nagaraj, *Reviving Higher Education in India*, Brookings Institution, November 27, 2019.
7. J. Pichette et al., *Making Sense of Microcredentials*, Higher Education Quality Council of Ontario, 2021.
8. Statistics Canada, "In the midst of high job vacancies and historically low unemployment, Canada faces record retirements from an aging labour force: number of seniors aged 65 and older grows six times faster than children 0-14," The Daily, April 7, 2022.
9. Jane Hutchison, *Digital Skills for Today and Tomorrow: Perspectives From Canadian Employers and Industry Leaders*, The Conference Board of Canada, 2022.
10. Alex Usher, *The State of Postsecondary Education in Canada, 2022*, Higher Education Strategy Associates, 2022.
11. Nicole M. Stephens, MarYam G. Hamedani, and Mesmin Destin, "Closing The Social-Class Achievement Gap: A Difference-Education Intervention Improves First-Generation Students' Academic Performance and All Students' College Transition," *Psychological Science* 25, no. 4 (2014): pp. 943-53.
12. Statistics Canada, "Perceived mental health, by age group," accessed January 23, 2023.
13. Gartner, *Market Guide for Higher Education Catalog and Curriculum Management Solutions*, 2021.
14. CourseLeaf, "Solving Data Tracking and Consistency Issues with CourseLeaf," a CourseLeaf case study, 2021.
15. Gartner, *Top Strategic Technology Trends for 2023*, 2022.
16. Gartner, *Top Technology Trends in Higher Education for 2022*, 2022.
17. Gartner, *The Future of ERP Is Composable*, 2020.
18. A.W. (Tony) Bates, *Emerging technologies: virtual and augmented reality*, Teaching in a Digital Age – Second Edition, Pressbooks, 2022.
19. Liferay, *Improving Agility and Enabling Digital Transformation in Higher Education*, 2022.
20. Gartner, *2022 Strategic Roadmap for ERP*, 2022.
21. Deloitte and Workday, "Planning and learning for life," a case study, 2020.

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