An Increasing Demand for Technology Use in Teaching and Learning:

2023 Pan-Canadian Report on Digital Learning Trends in Canadian Post-Secondary Education

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Association canadienne de recherche sur la formation en ligne

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In addition, we acknowledge the work of the CDLRA research team, Dr. Nicole Johnson (Executive Director, Co-Director of Research, and Pan-Canadian Digital Learning Survey project lead), Dr. George Veletsianos (Co-Director of Research) and Dr. Jeff Seaman (Director of Analytics), along with the support of the individuals who served on CDLRA's Board of Directors in 2023 (Dr. Nicole Johnson, Dr. Stephanie McKeown, Cathy Newell-Kelly, Dr. Bruno Poëllhuber, and Dr. George Veletsianos). Bay View Analytics was responsible for the survey administration, data analysis, and chart production for this report.

We offer our gratitude to Alison Seaweed, from the Kwakiutl First Nation, who provided feedback on our 2023 surveys from an Indigenous perspective to help support the CDLRA in our efforts to begin decolonizing our work. The CDLRA acknowledges that, as a remote team, we live and work in many different locations on lands taken from Indigenous peoples. As a team, we seek to better understand the ongoing impacts of colonial systems and structures, particularly within the Canadian post-secondary education sector.

We thank the many people who have met with our team to discuss possible survey topics, to give feedback on our findings, and to share insights from the field. These perspectives have been critical in shaping our research initiatives.

We also thank the CDLRA team members and contractors who perform the tasks that support our day-to-day operations and our ability to conduct our research studies.

Most importantly, we thank our survey respondents.

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EXECUTIVE SUMMARY

In 2023, institutions found themselves grappling with an increased desire among students for technology use in post-secondary education, alongside new challenges associated with the rise of generative artificial intelligence (GenAI). Pandemic restrictions gradually eased, and day-to-day life began to resemble the pre-pandemic state. At the same time, the cost of living increased and, for many students, a nationwide housing crisis meant that securing an affordable rental near campus was next to impossible. All these factors impacted post-secondary education in Canada over the past year and are reflected in continued demand for online and hybrid course options despite the feasibility of a full return to in-person classes from a public health perspective.

Our findings this year come from our *2023 Pan-Canadian Digital Learning Surveys*, conducted in Spring and Fall (referred to in this report as the Spring Survey and Fall Survey). The findings overwhelmingly suggest that greater technology integration in teaching and learning is expected going forward. Faculty and students want more options for flexible learning without being forced to take only online or only in-person courses. With a desire for more technology-supported learning experiences comes concern about faculty skills and know-how to teach in digital environments. Professional development for faculty, as in previous years, remains mostly voluntary and quality assurance is a top operational concern.

The following report provides an overview of the findings on a range of topics related to digital learning:

- trends in online and hybrid learning
- common technologies used in teaching and learning
- teaching competencies and preferences
- student attitudes and preferences
- digital learning challenges
- professional development,
- equity, diversity, and inclusion (EDI)
- open educational resources and open practices

With the launch of ChatGPT in late 2022, artificial intelligence (AI) has been at the forefront of discussions about technology use and academic integrity in post-secondary education. Dr. George Veletsianos, Co-Director of Research at CDLRA, authored a Special Topics Report to share the AI-specific findings from data gathered by the CDLRA in Spring 2023. The CDLRA thanks D2L for their sponsorship of the Special Topics Report on AI, which is available here:

> Veletsianos, G. (2023). Generative artificial intelligence in Canadian post-secondary education: AI policies, possibilities, realities, and futures. *Canadian Digital Learning Research Association*. https://www.d2l.com/resources/assets/cdlra-2023-ai-report/

Key findings from 2023:

1. Technology use in teaching and learning is likely to grow over the next two years. In particular, there appears to be a continued demand for flexible learning experiences, especially hybrid course offerings.

2. Factors driving student needs and preferences for certain course delivery modes (e.g., in-person learning, hybrid learning, online learning) are competing priorities (e.g., work, caregiving responsibilities), distance from campus and factors related to transportation, the nature of the program, and modality preferences.

3. Faculty burnout and academic integrity are the most pressing teaching and learning challenges at post-secondary institutions across Canada.

4. Professional development for faculty is mostly voluntary, regardless of course delivery mode. The most common professional development topics for faculty are effective teaching practices, how to use the institution's learning management system (LMS), academic integrity, assessment strategies, and the use of video-based technologies.

5. Most survey respondents reported being familiar with open educational resources and their uses. There is also some indication that the cost of course materials is a barrier for at least some students at many institutions; a challenge that OER can help overcome.

INTRODUCTION TO THE 2023 REPORTS

Prior to the pandemic, the CDLRA conducted longitudinal research to track digital learning trends. Although the pandemic proved to be a formidable disruptor, rendering many of our previous questions obsolete, it provided an opportunity to gather just-in-time data for several years and to rethink our approach to collecting longitudinal data when the time was right again. In 2023, the CDLRA decided that the post-secondary landscape was stable enough to resume longitudinal research, and we launched the *Pan-Canadian Digital Learning Survey Series* project to replace our previous National Annual Survey. In collaboration with our sponsors, partners, and interest groups, we designed survey questions that will hold relevance for several years to come.

Survey Topics

The widespread interest in digital learning means that we now have a greater breadth of topics in our surveys. In order to facilitate a robust investigation while minimizing the survey burden, the CDLRA now conducts two surveys each year (delivered in Spring and Fall) instead of our previous once-per-year approach. Each survey focuses on a different set of topics, as listed in the table below.

Table 1
CDLRA Survey Topics

Spring Survey	Fall Survey
Trends in online and hybrid learning	Technologies used in teaching and learning
Faculty attitudes and preferences	Equity, diversity, and inclusion (EDI) and digital learning
Student attitudes and preferences	Professional development and digital learning
Digital learning challenges	Open educational resources and open practices
Speculative futures	

Survey Respondents

In 2022, we moved away from our previous approach of gathering a single institutional response and began surveying multiple individuals at each institution, representing a variety of roles. Our new approach proved to be a great success in 2022, and we continue this same approach in 2023.

The findings presented in this report represent the perspectives of administrators (e.g., senior administrators, deans and directors), teaching and learning leaders, and other staff members such as instructional designers and educational developers.

**Our hope is to gather faculty responses as we expand the survey reach in the years to come. If any faculty reading this report are interested in participating in future surveys, we invite you to sign up to join our survey roster using the QR code on the final page of this report.*

Defining Key Terms Related to Course Modality

Based on the CDLRA's previous work on developing a common framework for categorizing courses by modality, we acknowledge the importance of clarifying exactly what we mean when we use certain terms.

When discussing course modalities, we use the following definitions:

> ONLINE LEARNING means that the entirety of a course is delivered online and that there are no on-campus requirements for students. Online learning experiences may be synchronous, asynchronous, or a mix of the two.
>
> IN-PERSON LEARNING means that students are required to attend all classes in an in-person setting. Technology may be used to varying extents in an in-person course.
>
> HYBRID LEARNING (also referred to as blended learning) means that there is some mix of in-person and online instruction within a course. There are many different variations of hybrid learning.
>
> MULTI-ACCESS LEARNING means that instruction is available in different modes for a given course and students can move between modalities at their own discretion. Hyflex learning is an example of multi-access learning.

These definitions are based on past research conducted by the CDLRA, WCET, and Bay View Analytics. For more information on categorizing courses by modality, please refer to the following resources:

Johnson, N. (2023). What to do when the modality of a learning experience is unclear: Guidelines for creating multidimensional learning experiences. *WICHE Cooperative for Educational Technologies (WCET).* https://wcet.wiche.edu/resources/what-to-do-when-the-modality-of-a-learning-experience-is-unclear-guidelines-for-creating-multidimensional-learning-experiences/

Johnson, N., Seaman, J., & Poulin, R. (2022). Defining different modes of learning: Resolving confusion and contention through consensus. *Online Learning, 26*(3), 91-110. https://olj.onlinelearningconsortium.org/index.php/olj/article/view/3565/1193

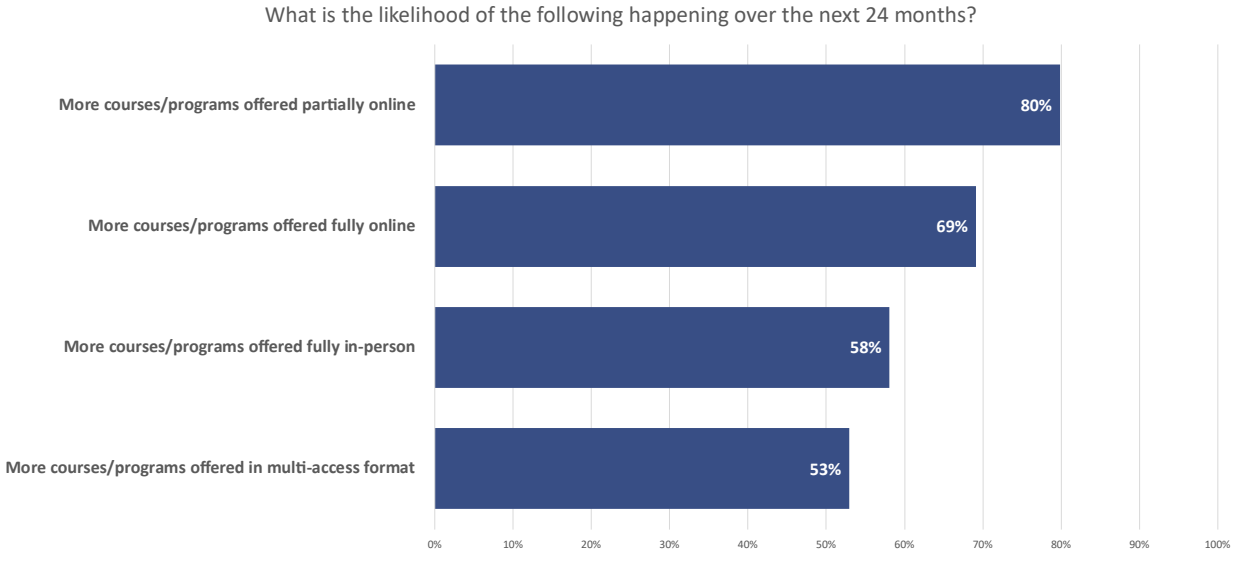
Johnson, N. (2021). Evolving definitions in digital learning: A national framework for categorizing commonly used terms. *Canadian Digital Learning Research Association*. http://www.cdlra-acrfl.ca/2021-cdlra-definitions-report/

DIGITAL LEARNING TRENDS

Monitoring and forecasting the growth of different course modalities is an important aspect of strategic planning at post-secondary institutions across Canada. The shift to predominantly online course delivery for over a year at the start of the pandemic meant that many faculty and students became more comfortable with technology use in learning. In particular, findings from the CDLRA surveys conducted in 2021 and 2022 showed a trend toward hybrid learning (a mix of online and in-person instruction).

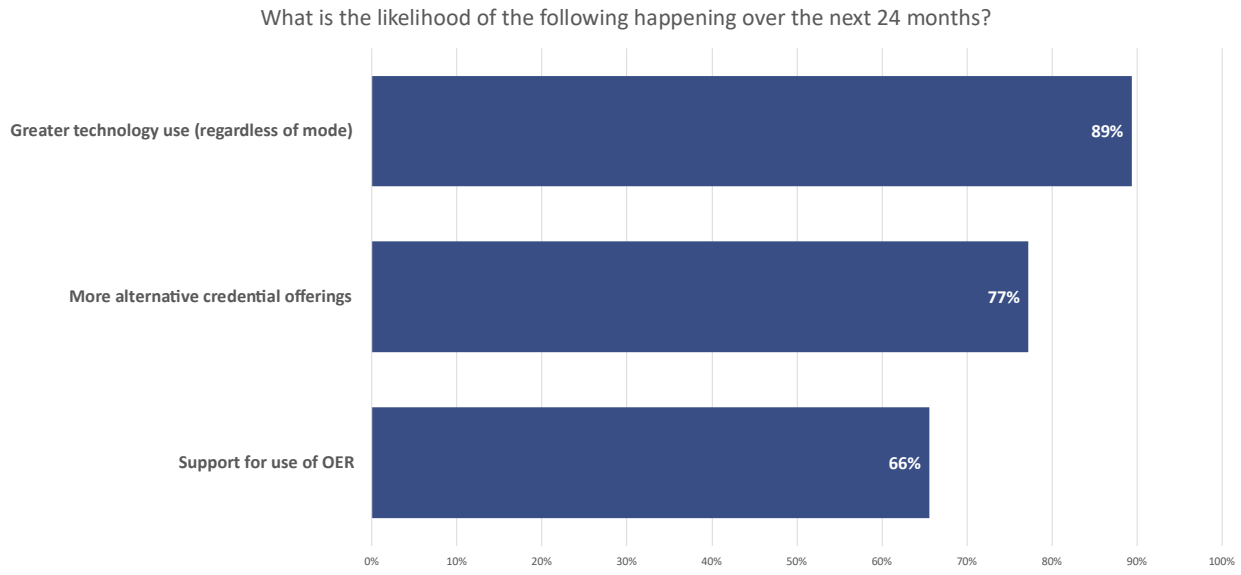
Although it is clear that there has been a substantial increase in technology use in post-secondary education compared to the pre-pandemic state, the CDLRA wanted to gauge whether further increases are expected. The 2023 Spring Survey asked respondents the following question: Compared to the current situation at your institution, what is the likelihood of the following happening over the next 24 months?

Regarding course modalities, the Spring Survey findings indicate that hybrid learning and online learning (to a lesser extent) continue to be growing trends. Most respondents (80%) reported that they expected that more courses or programs would be offered partially online (hybrid) within the next two years. Over two-thirds of respondents (69%) expected more online courses or programs. Just over half of participants reported an expectation for more in-person courses (58%) and more multi-access courses (53%).



Other important technology-related trends in post-secondary education include technology use in teaching and learning generally, alternative credential offerings (these offerings are often delivered online), and support for the use of Open Educational Resources (OER) (OER are often produced, shared, and repurposed using digital technologies).

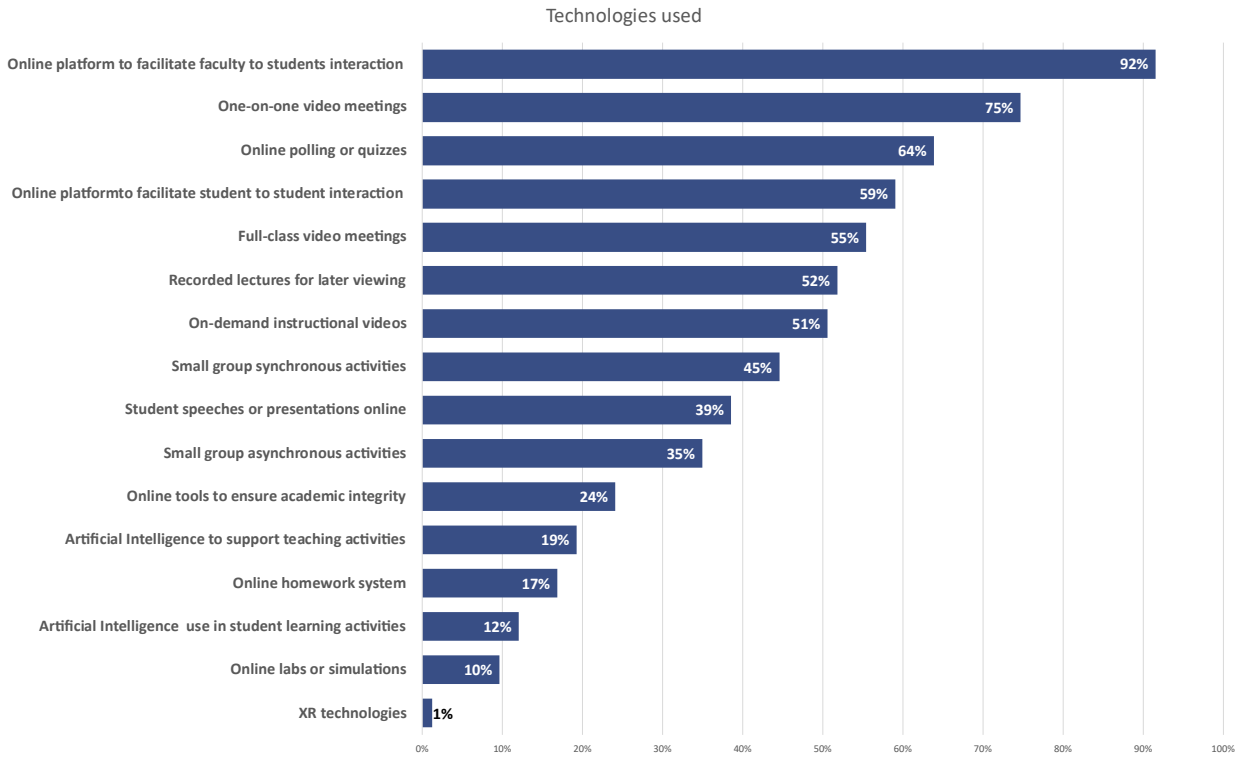
Nearly all respondents (89%) expected greater technology use in post-secondary education, regardless of course delivery mode, over the next two years. Additionally, the majority of respondents reported that more alternative credential offerings (77%) and greater support for the use of OER (66%) were likely.



TECHNOLOGIES USED IN TEACHING AND LEARNING

The Fall Survey explored the different types of technologies used in education over the past year. The following question was posed to administrators, teaching and learning leaders and staff who had indicated that they had taught over the past 12 months.

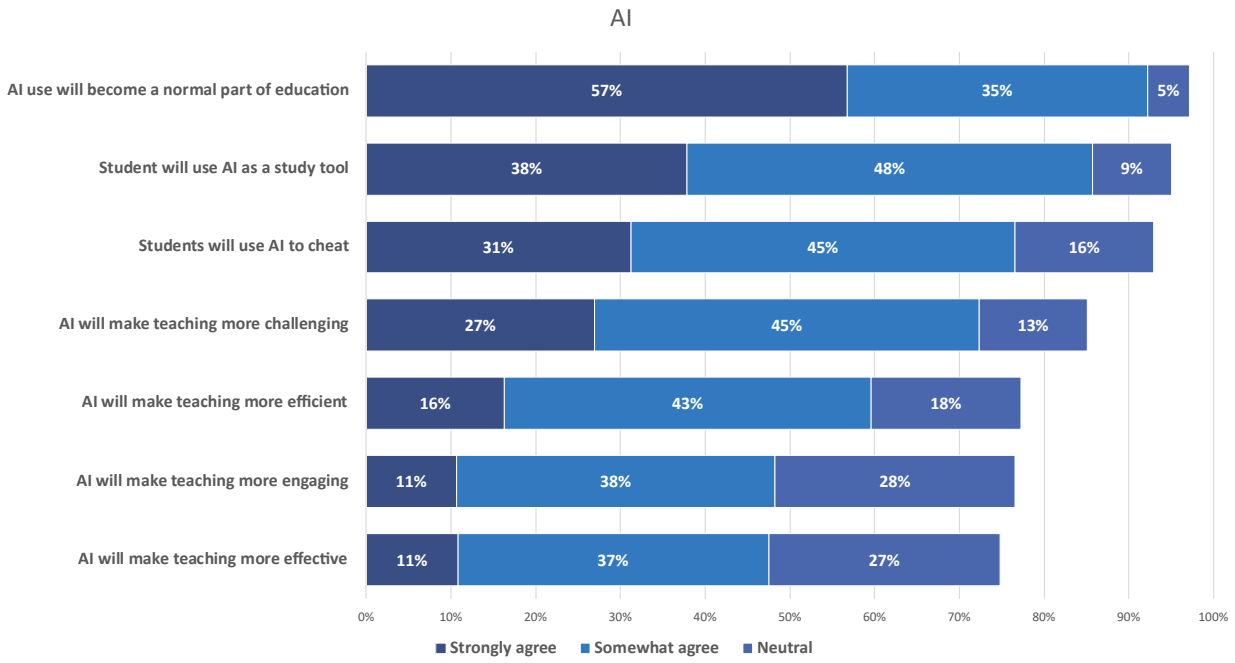
The top technology that respondents reported using in their courses over the past year was an online platform (e.g., LMS) to facilitate faculty-to-student interaction (92%). Video-based technologies to facilitate one-on-one meetings were the second-most popular technology used (75%). Other technologies that more than half of respondents reported using were online polling or quizzes (64%), online platforms (e.g., LMS) to facilitate student-to-student interaction (59%), full-class video meetings (55%), recorded lectures for later viewing (52%), and on-demand instructional videos.



The widespread popularity and uptake of AI use among students has been an important topic of discussion across the post-secondary sector. The Fall Survey asked all respondents about the extent of their agreement with several statements about AI use in teaching and learning.

Respondents overwhelmingly agreed (either "Somewhat" or "Strongly") (92%) that AI use will become a normal part of education. Most respondents (86%) also agreed to some extent that students will use AI as a study tool. Around three-quarters of respondents agreed to some extent that students will use AI to cheat (76%) and that AI will make teaching more challenging (72%).

A slight majority of respondents (59%) strongly agreed or somewhat agreed that AI will make teaching more efficient. A substantial minority also strongly agreed or somewhat agreed that AI will make teaching more engaging (49%) and that AI will make teaching more effective (48%).

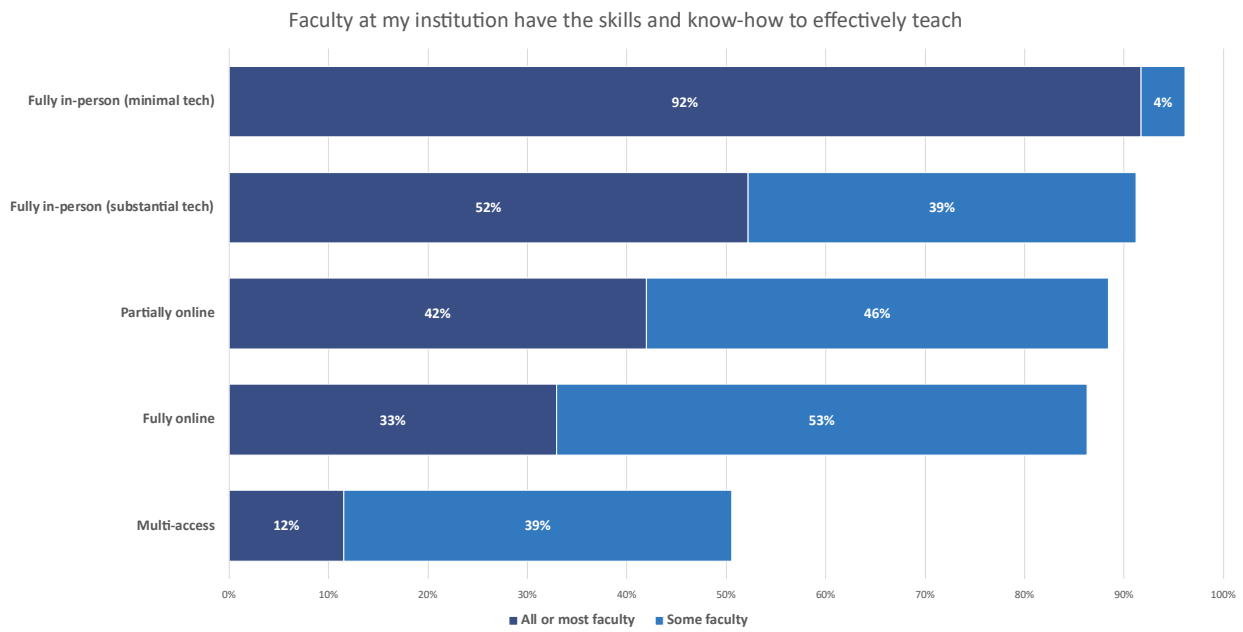


Overall, these findings highlight which technologies are predominantly used in teaching and learning in Canadian post-secondary education and indicate that AI (currently an emergent technology) is likely to become a mainstay.

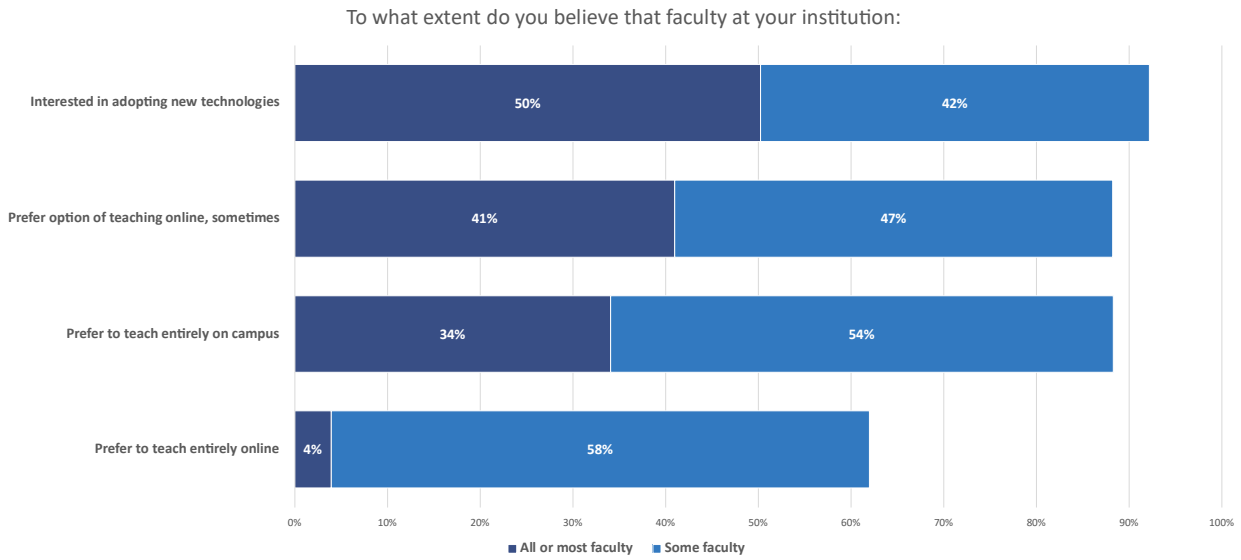
TEACHING COMPETENCIES AND PREFERENCES

The Spring Survey asked respondents whether faculty at their institution had the skills and know-how to teach in different modalities effectively. Ultimately, the findings show that the greater the technology requirements for a course, the less confidence administrators and teaching and learning leaders have in faculty competencies. For example, nearly all respondents (92%) reported that all or most faculty had their institution had the skills and know-how to teach in an in-person setting with minimal technology. In contrast, when an in-person learning environment involves substantial technology use, only 52% of respondents reported that faculty had the skills and know-how to teach in that setting effectively.

Less than half of respondents reported that all or most faculty had the skills and know-how to teach hybrid courses (42%) or online courses (33%). Respondents were much less confident in faculty competencies related to teaching multi-access courses compared to the other modalities, which may be indicative of the pedagogical and logistical challenges that are inherent to teaching students who are attending online while teaching students in the classroom at the same time. It is also important to note that the majority of respondents reported that there were at least some faculty who were capable of teaching in any of the following modes.



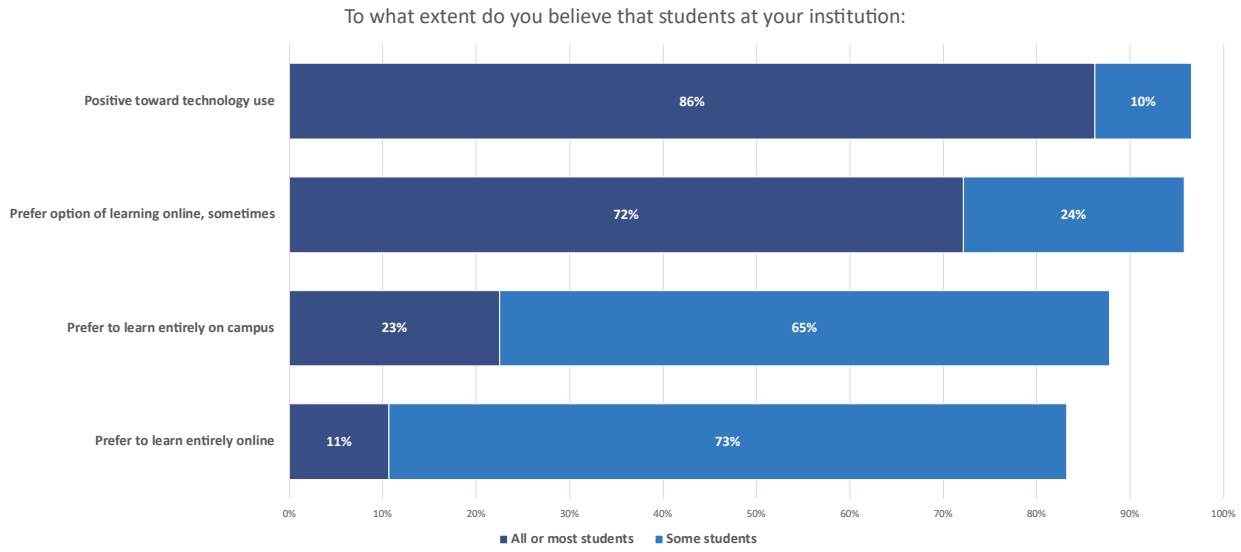
The survey also asked respondents to provide their perceptions and observations about faculty preferences related to teaching with technology. One-half of respondents reported that all or most faculty are interested in adopting new technologies. A sizeable minority (41%) reported that all or most faculty prefer having the option to teach online some of the time (e.g., teaching hybrid courses or teaching a mix of online and in-person courses). Very few respondents (4%) noted that all or most faculty preferred to teach entirely online.



STUDENT ATTITUDES AND PREFERENCES

The Spring Survey asked respondents two questions about student attitudes and preferences. Like the findings related to faculty, these findings reflect respondent perceptions of student preferences (not student perspectives, themselves).

The first question about students queried respondents about the extent to which they believed that students at their institution held the attitudes and preferences listed in the chart below. Overall, many respondents (86%) held the opinion that all or most students at their institution felt positively toward technology use. Additionally, respondents believed that all or most students preferred having the option of learning online some of the time (72%); however, only a few respondents (11%) believed that all or most students prefer to learn entirely online. Counter to the prevailing narrative that students only want in-person learning, roughly one-quarter of respondents (23%) believed that all or most students wanted to learn entirely on campus. Collectively, the findings indicate that having the option to learn online sometimes, without being required to learn online all the time, is what respondents believe students find most desirable.



The second question related to students was open-ended. The survey asked respondents what, in their opinion, drives student needs and preferences for course delivery modes. The responses to this question were very consistent and tended to mention issues like competing priorities (e.g., work or caregiving responsibilities), geography (e.g., distance to campus), transportation issues, the housing crisis across Canada, the accessibility of a modality in relation to student needs, the nature of the program (e.g., whether hands-on training is essential for skill mastery), and students' modality preferences.

The following quotes illustrate common responses to the question of what drives student needs and preferences:

> *"Several factors play significant roles in determining student needs and preferences for course delivery modes and technology use. Accessibility and flexibility, typically offered by online learning platforms, are key, catering to various student schedules and geographical locations. Individual learning styles can greatly influence preferences, requiring a diverse range of delivery modes to accommodate all learners. The nature of the course content itself also has a substantial impact, as some subjects may naturally align better with certain modes of instruction."*

> *"At our college, we have a diverse student body. Many are older and working or caring for children, aging parents and cannot commit to attending F2F classes."*

> *"Generally, students prefer core courses, and courses that are interactive or hands-on (lab, design studio, seminar, etc.) to be in person or blended, while electives or content-centric courses to be online. Overall, students desire a blend in their overall schedule, with online and face-to-face courses, in order to balance their schedule."*

> *"Course delivery modes are driven by life choices that sit outside of university, which is only one small part of the focus on modern students. Universities need to understand and come to grips with the idea that they are not the most important thing in most students' lives, and that students are mostly adults who can make their own choices. Most students need and desire some level of autonomy and flexibility."*

> *"Childcare and work commitments. Gas expenses. Technology is limited by the students' skills and experience, and tech is expensive and unreliable wifi in rural locations."*

> *"My experience has led me to notice that some students who start in-person switch to online mode very quickly. The advantages and possibilities offered by online training take precedence over their need to be face-to-face. Online allows you to concentrate better, less distraction, no transportation, more comfortable, less affected by bad weather, etc."*

> *"Desire to remain in their home community, balancing studies with work and family obligations."*

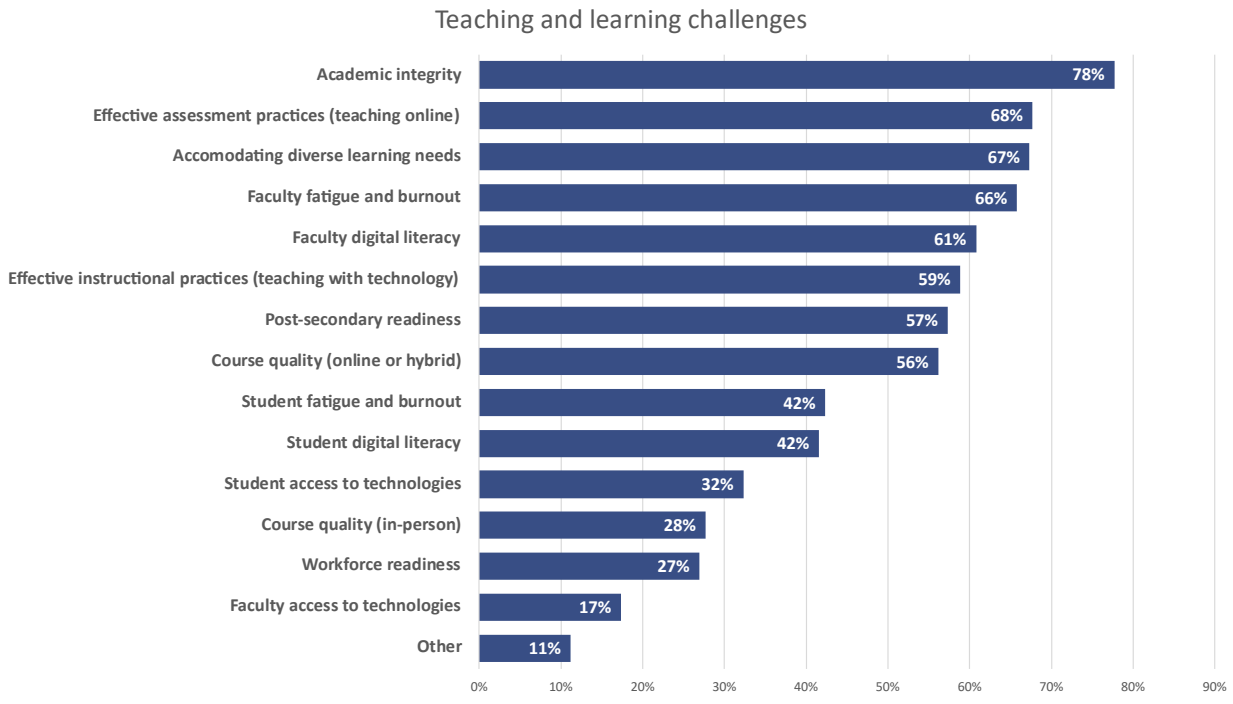
> *"Cost of living is extremely high, so many students have to work or work more, which makes online learning desirable for them."*

In summary, respondents tended to hold the perception that students desire more flexibility and technology use in their post-secondary learning experiences. For many students, it seems that being able to learn fully or partially online helps them to achieve a better work-life-education balance. Students appear to want more options available to them: to choose in-person, online, or hybrid learning experiences according to their needs and preferences.

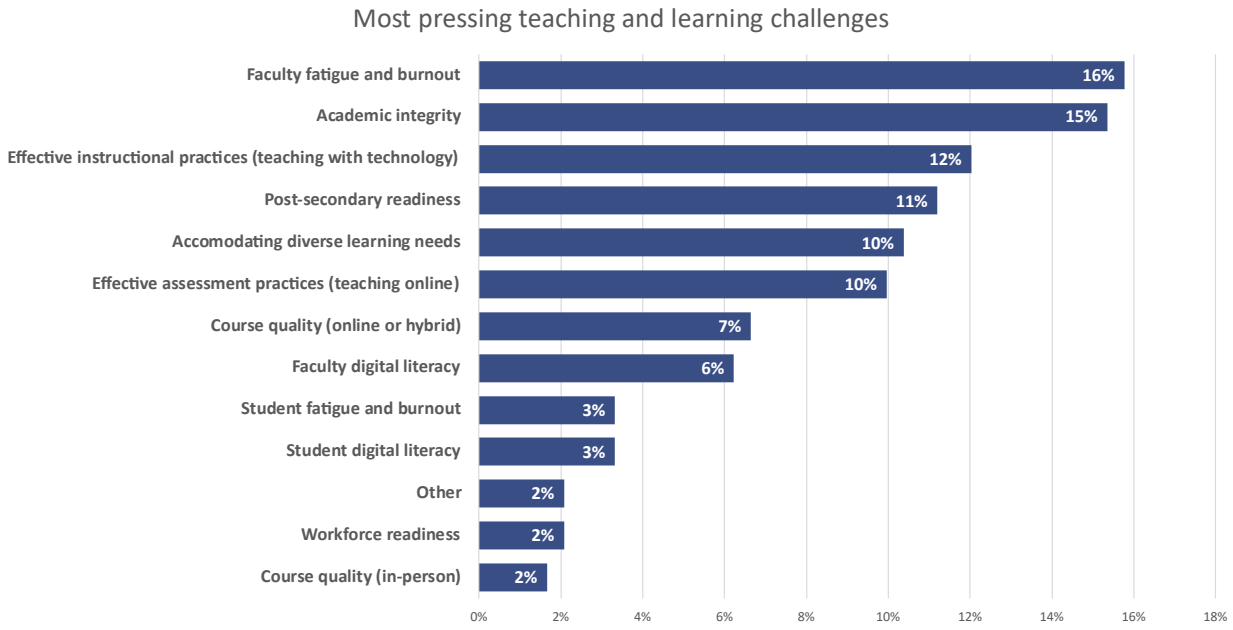
DIGITAL LEARNING CHALLENGES

The increased demand for online and hybrid learning, technology integration, and the adoption of AI by students has resulted in multiple instructional and operational challenges.

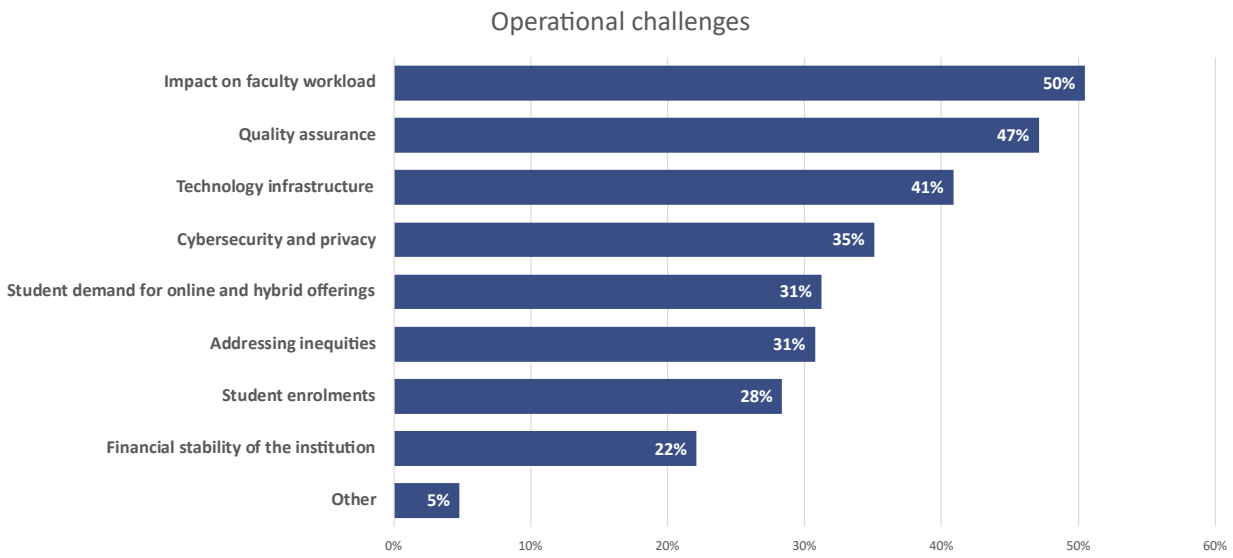
The Spring Survey asked respondents to identify all teaching and learning challenges that were pressing at their institution at the time of the survey. The findings indicate that many respondents are experiencing a multitude of pressing teaching and learning challenges (eight of the items on the chart below were selected by the majority). The most commonly selected challenge was academic integrity (78%), followed by effective assessment practices for online learning contexts (68%), accommodating diverse learning needs (67%), and faculty fatigue and burnout (66%). More than half of respondents also identified the following as challenges: faculty digital literacy (61%), effective instructional practices for teaching with technology (59%), readiness for post-secondary studies among first-year students (57%), and evaluating the quality of online and hybrid courses (56%).



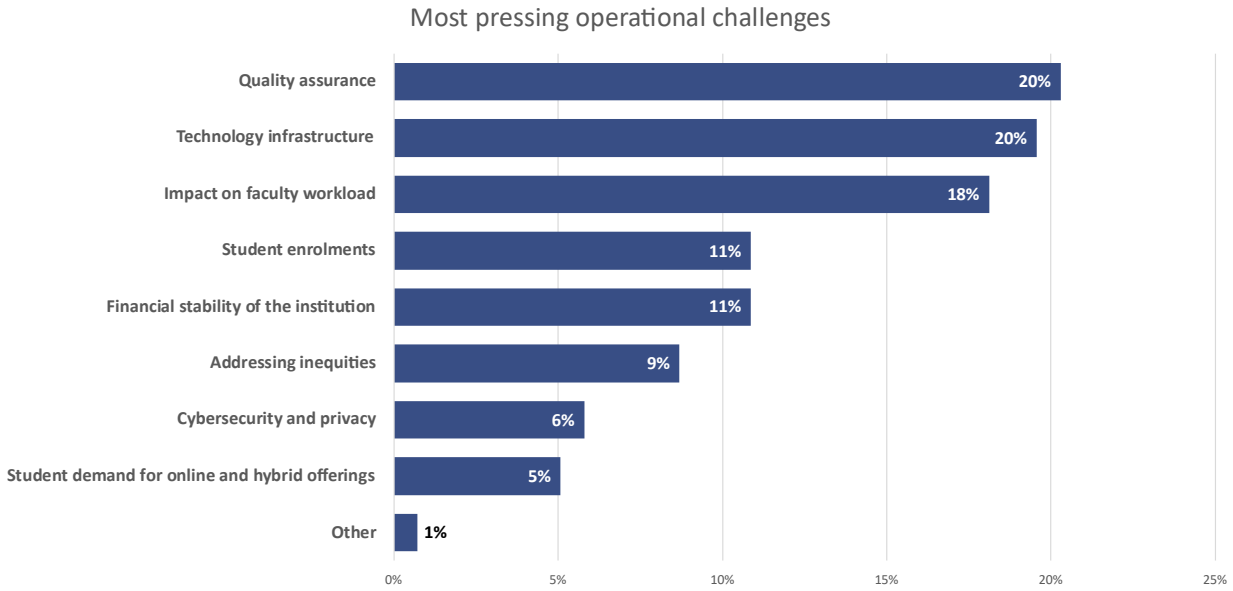
After selecting all pressing challenges at their institution, respondents were then asked to identify the most pressing challenge from their selections. Faculty fatigue and burnout, and academic integrity topped the list as the most pressing teaching and learning challenges at institutions; however, no single issue was selected as being most pressing by a large proportion of the respondents.



The Spring Survey also asked respondents to select any operational challenges related to digital learning that were pressing at their institution. The most commonly selected responses included impact on faculty workload (50%), quality assurance (47%), and technology infrastructure (41%); however, it is important to note that the overall rate of pressing operational challenges was much lower than the rate of pressing teaching and learning challenges.



When asked to identify which of their selected responses were most pressing, quality assurance, technology infrastructure, and impact on faculty workload continued to top the list.



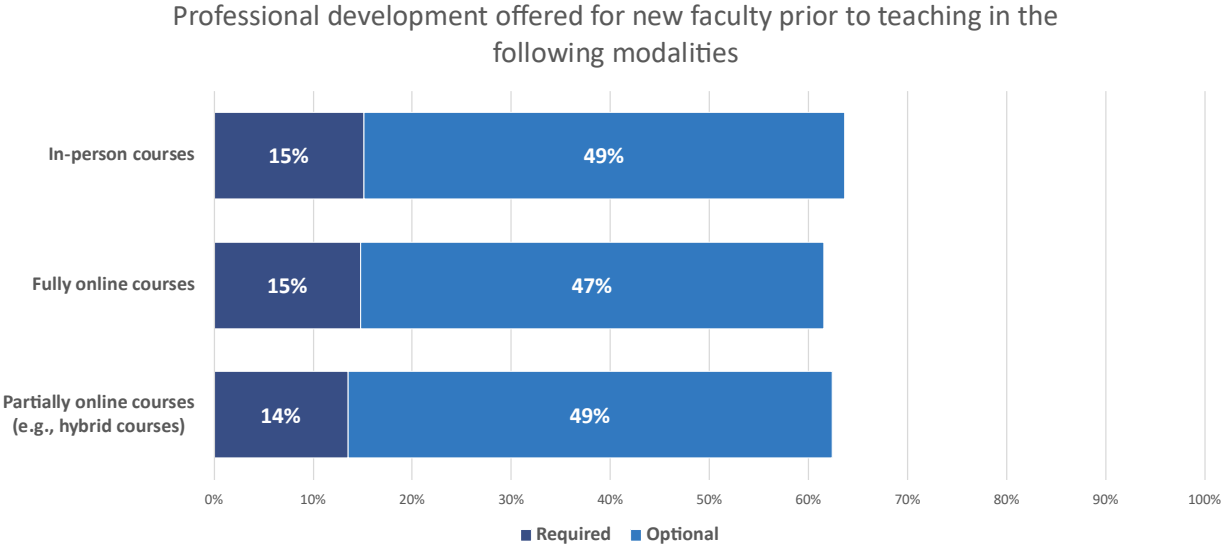
The findings related to challenges reiterate concerns seen in previous years related to academic integrity. Faculty fatigue and burnout and the impact of digital learning on faculty workload continue to be major challenges for institutions that do not seem to be lessening with time.

PROFESSIONAL DEVELOPMENT AND DIGITAL LEARNING

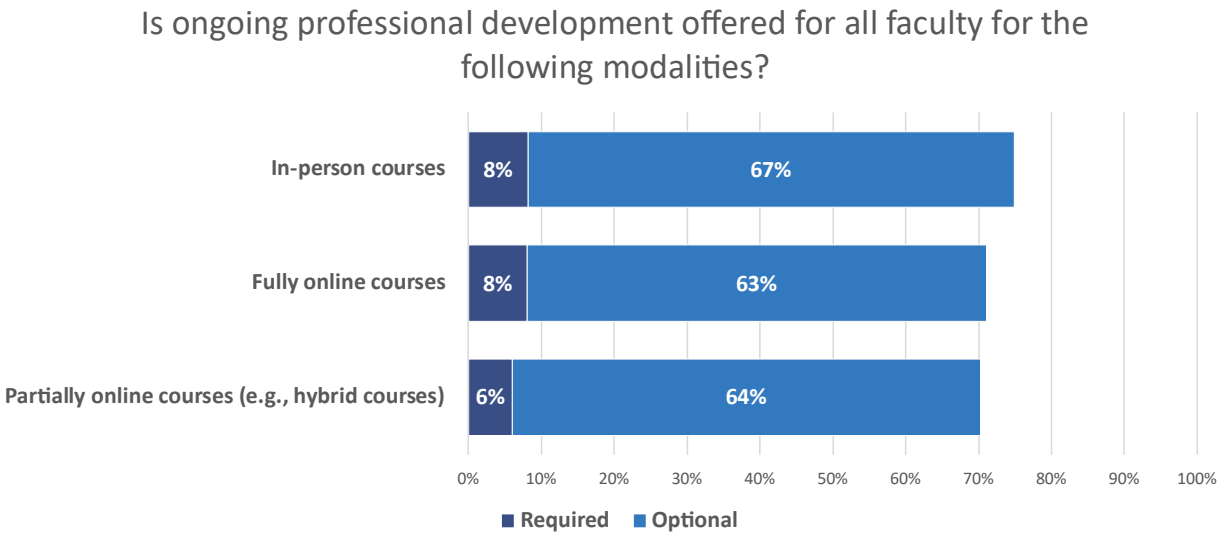
Considering the findings related to teaching competencies, training faculty to teach in different modalities has been a topic of interest in the post-secondary sector. The 2023 findings on professional development are consistent with CDLRA findings from previous years (specifically 2019 and 2022) that show that professional development for teaching online is mostly voluntary.

In 2023, we also explored whether the requirements for professional development differed by modality or teaching experience. The Fall Survey asked respondents whether professional development for teaching in different modalities (hybrid, in-person, online) was offered, whether it was required or voluntary, and whether it was offered to new faculty and experienced faculty alike.

The findings show that roughly 60% of respondents reported that professional development for new faculty was available at their institution. Viewed another way, 40% of institutions do not offer any professional development for new faculty, and only 15% at most require it. Professional development offerings and requirements did not differ in any significant way by modality.

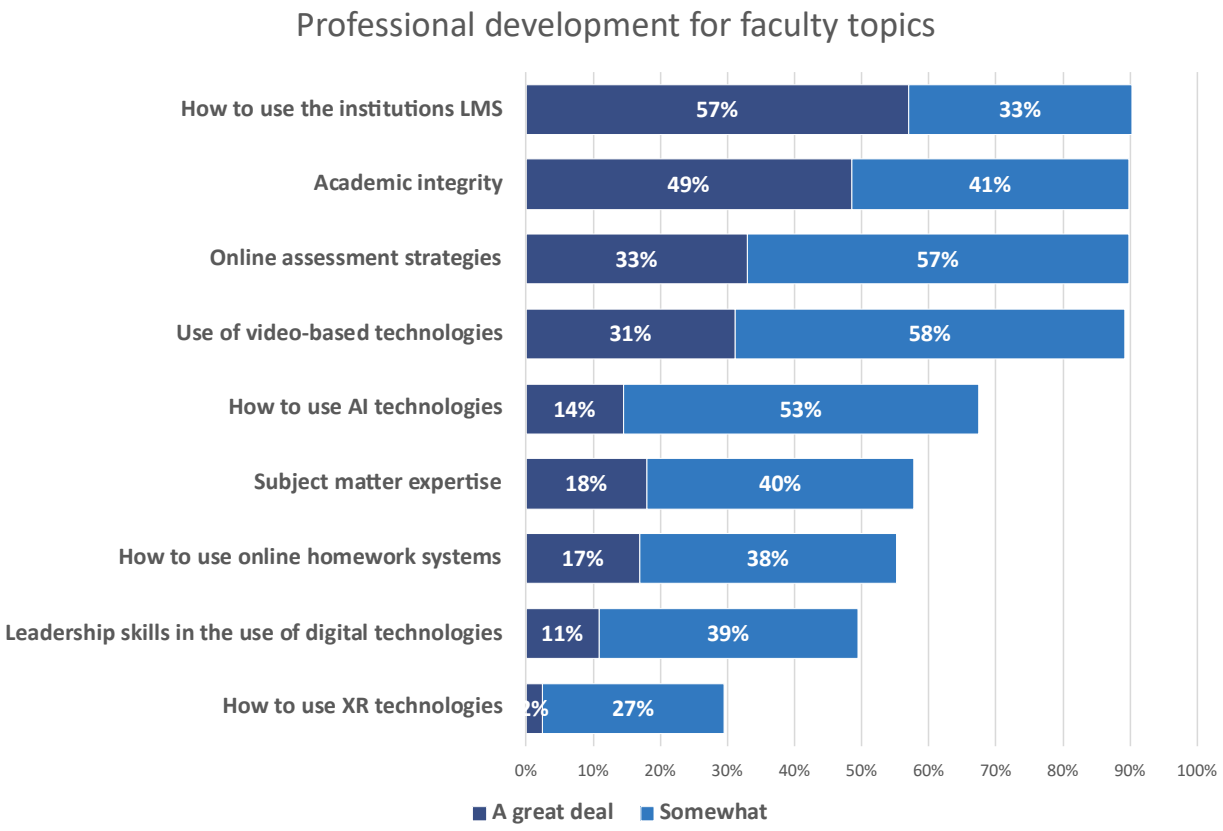


Approximately 70% of respondents reported that their institution offered ongoing professional development for faculty with little difference by teaching modality. Compared to professional development for new faculty, ongoing professional development for all faculty is less likely to be required.

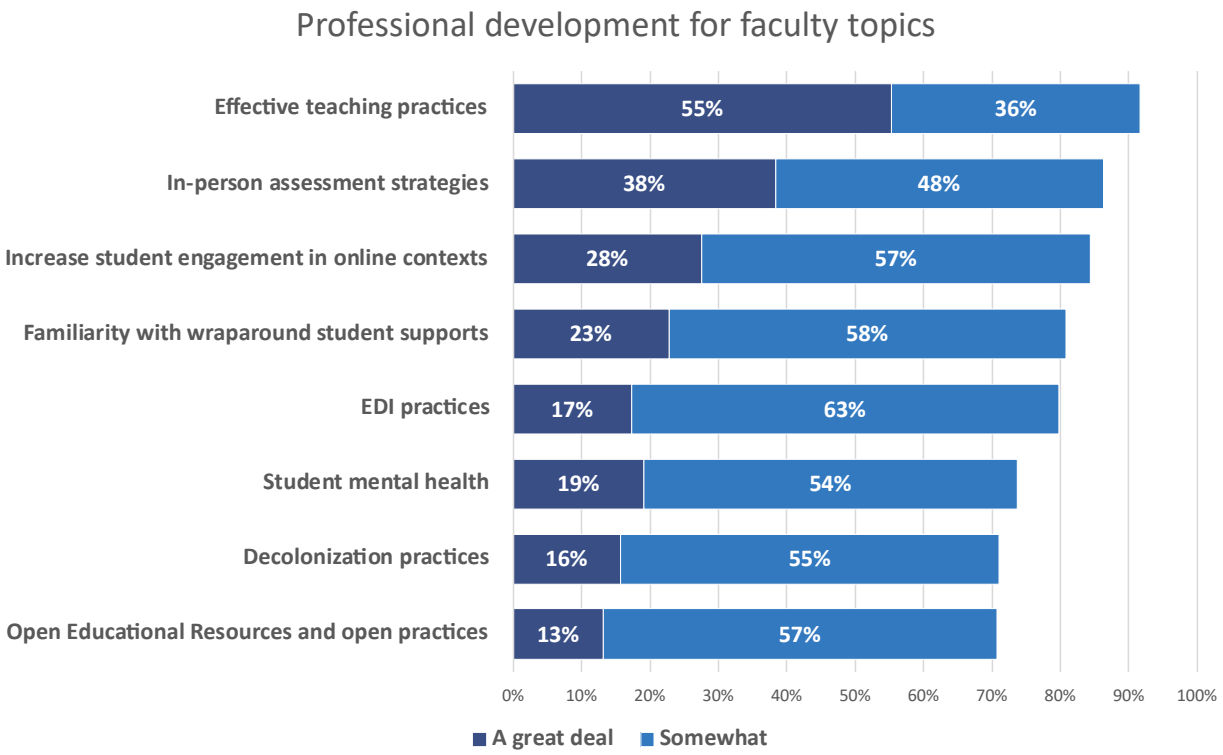


Additionally, the Fall Survey asked respondents about the extent to professional development for faculty focused on two sets of topics.

The first set of topics related primarily to technology use. More than half of respondents (57%) reported that how to use the institution's LMS received a great deal of attention as a professional development. Just under half of the respondents also identified academic integrity a prioritized professional development topic.



The second set of topics centred on teaching practices and strategies. More than one-half of respondents (55%) selected effective teaching practices as receiving a great deal of focus, and more than one-third of respondents (38%) identified in-person assessment strategies as receiving a great deal of attention.



Overall, the data shows that professional development is mostly voluntary, and the amount of professional development offered does not differ by mode, regardless of whether faculty will be teaching in an in-person, online, or hybrid context.

EQUITY, DIVERSITY, AND INCLUSION (EDI) AND DIGITAL LEARNING

The integration of digital technologies into post-secondary education is an important tool for promoting equitable learning experiences, meeting the needs of a diverse student population, and extending opportunities to learners who would otherwise be excluded from post-secondary education. At the same time, technology use can also create disadvantages for some learners and digital learning is not a panacea for overcoming the range of obstacles that learners face.

EDI is a term that, although used frequently, holds varying meanings to different individuals. To better understand what respondents mean when they use the term EDI, the Fall Survey asked respondents to provide their personal definitions of equity, diversity, and inclusion. The following quotes reflect typical respondent answers to this question:

> *"Equity: ensuring that all individuals are treated with equal respect and provided the same opportunities regardless of race, gender, age, disability, ability, or sexuality. Diversity: respecting and embracing that every individual is unique and understanding that uniqueness makes society stronger if it is welcomed and supported. Inclusion: striving to create an environment in which all can be welcomed and participate to the best of our ability within the context of the environment. Taken as a whole and broken to simplest terms...everyone is a human being and deserves to be treated as a human being with respect, compassion, and kindness to the best of our abilities."*

> *"An environment without barriers to anyone due to differences, culture or abilities."*

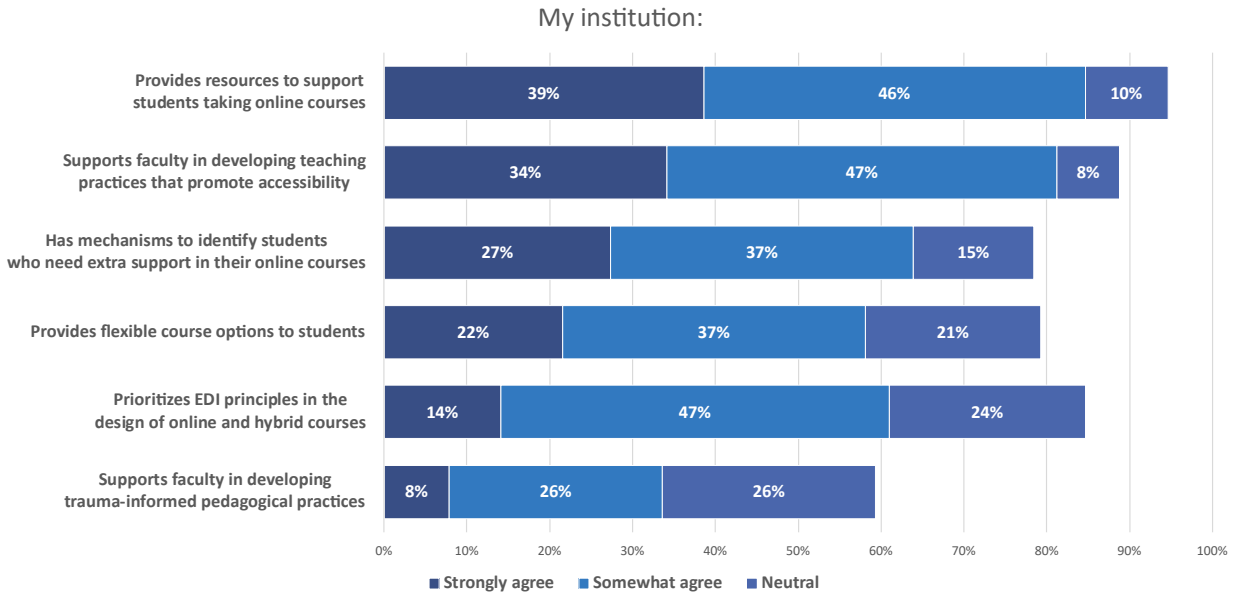
> *"All folks, no matter our gender, ethnicity, culture, or other decreed societal demarcation, should have full access to basic human rights and an equal voice towards deciding what those human rights should consist of. It's important, though, to understand that some voices are marginalized and disempowered. Every effort should be made to help empower all marginalized voices at all times."*

> *"Equality, diversity, and inclusion in higher learning encompass the principles of providing equal opportunities and fair treatment for all students and members of the academic community, regardless of their background or characteristics; valuing and celebrating a wide range of backgrounds, experiences, and identities; and actively creating an environment that fosters a sense of belonging, respect, and accessibility for everyone."*

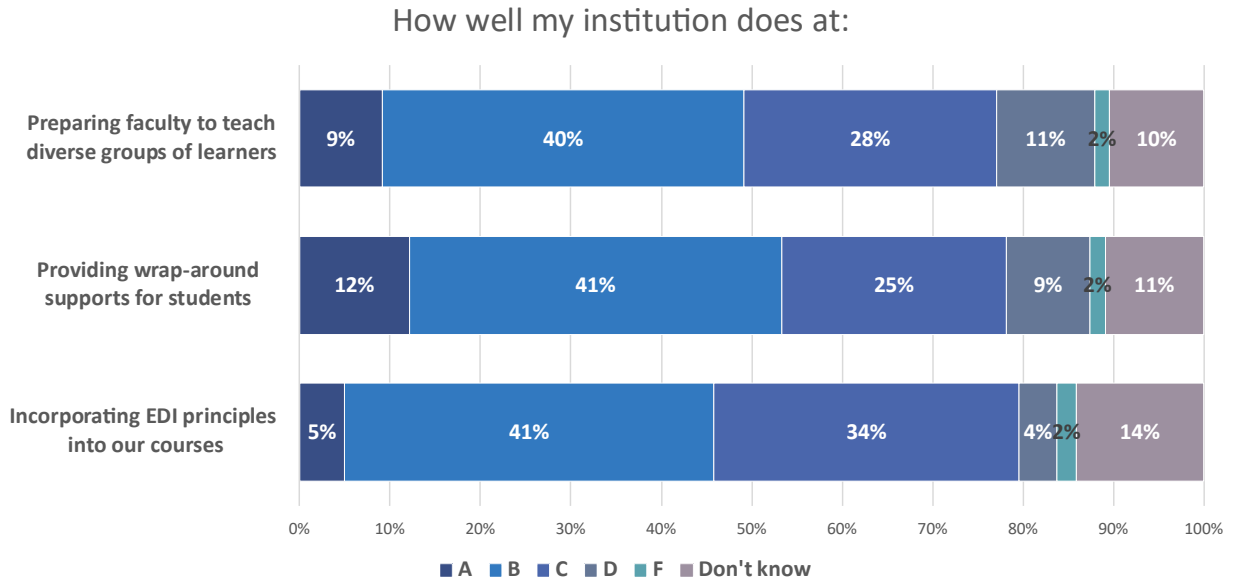
> *"Reducing barriers so that learners are able to participate in their preferred learning environment. This also includes creating safe learning environments where learners are able to share ideas, ask questions and feel free of judgement or punishments for a differing opinion."*
>
> *"Striving to treat all people fairly and equitably, taking into account the differences in the availability of resources that impact various peoples' access to education and other opportunities."*
>
> *"Equity is about providing supports to students so that they have a fair shot at excelling. Diversity is about the presence of diverse populations in the group (different ages, backgrounds, genders, abilities, etc.) Inclusion is about setting and maintaining an environment that allows everyone to feel fully comfortable participating. The instructor carries out these actions in designing and delivering courses. Ideally, EDI is part of a systemic plan for the whole institution to be welcoming to all to achieve our goals while interacting harmoniously."*

Asking respondents to share their individual definitions of EDI provides context for the quantitative findings related to EDI. These findings are nuanced as they reflect varying meanings of EDI, as illustrated in the quotes above. For example, the Fall Survey asked respondents to rate their level of agreement with the following statements such as "my institution prioritizes EDI principles in the design of online and hybrid courses," and to provide their institution with a letter grade rating how well they are doing at "incorporating EDI principles into our courses." Given the range of definitions of what EDI means and entails, further research is needed to understand better what respondents identify as EDI principles in course design.

Overall, the quantitative findings related to EDI show that respondents agree to some extent that their institutions are providing resources to support students in taking online courses (85%), supporting faculty in developing teaching practices that promote accessibility (81%), providing mechanisms to identify students who need extra support in their online courses (64%), prioritizing EDI principles in the design of online and hybrid courses (61%), and providing flexible course options to students (59%). About one-third of respondents (34%) agreed to some extent that their institution supports faculty in developing trauma-informed pedagogical practices.



The Fall Survey also asked respondents to give a letter grade to rate how well their institution prepares faculty to teach a diverse group of learners in any modality, provides wrap-around supports for students who learn online, and incorporates EDI principles into courses in any modality. The findings show that respondents mostly gave their institutions a “B” or “C” rating with roughly equal numbers giving a grade of “D” or “F” as provided an “A” grade.



The survey asked any respondents who did not give their institution an “A” letter grade to provide an open-ended response sharing what their institution could do to improve. Commonly shared sentiments included improving faculty training, enhancing student support, and providing more flexible learning opportunities. The following quotes provide examples of these sentiments:

> *“We need to build courses that make diverse students visible, so students can see themselves in course materials and examples (most textbooks and content are white and western in language and culture). We need to build courses that are not for an imagined "middle-skilled" student. Build in supplemental supports and resources for students across a spectrum of ability and interest (from struggling students to exceeding students). We need to make it easier for students to choose the type of learning in-person, blended, online asynchronous that suits their needs and preferences.”*

> *“Aside from a small number of support staff, there is very little attention paid to web accessibility standards, no minimums are expected of instructors in that regard, and no dedicated supports are in place to assist with the considerable work of ensuring such standards are met.”*

> *“For faculty - there are many supports available, but they are not widely used.*
> *For students - not enough resources go into supporting student learning in online or hybrid learning environments.”*

> *“Online learners still lag behind in terms of access to supports and services. While there is a lot of education available for faculty, I don't get the sense that the majority take advantage of it or actually incorporate those learnings into their instructional design beyond checking boxes.”*

> *“More of a focus on online as something unique. Currently, we treat online courses as if they are the same as any other course. Faculty teach online without having basic training in how to engage and support online learners. There is also no requirement for online courses to be reviewed (as there is no requirement for in-person courses), so many are not accessible.”*

"We could do more to support and engage with students studying via distance. I also think that trending towards more asynchronous online courses would support a variety of learning styles and learners who may not be able to attend classes on campus or may not have the lifestyle flexibility to attend scheduled lectures. Learning should be accessible to everyone in the format in which they want to learn."

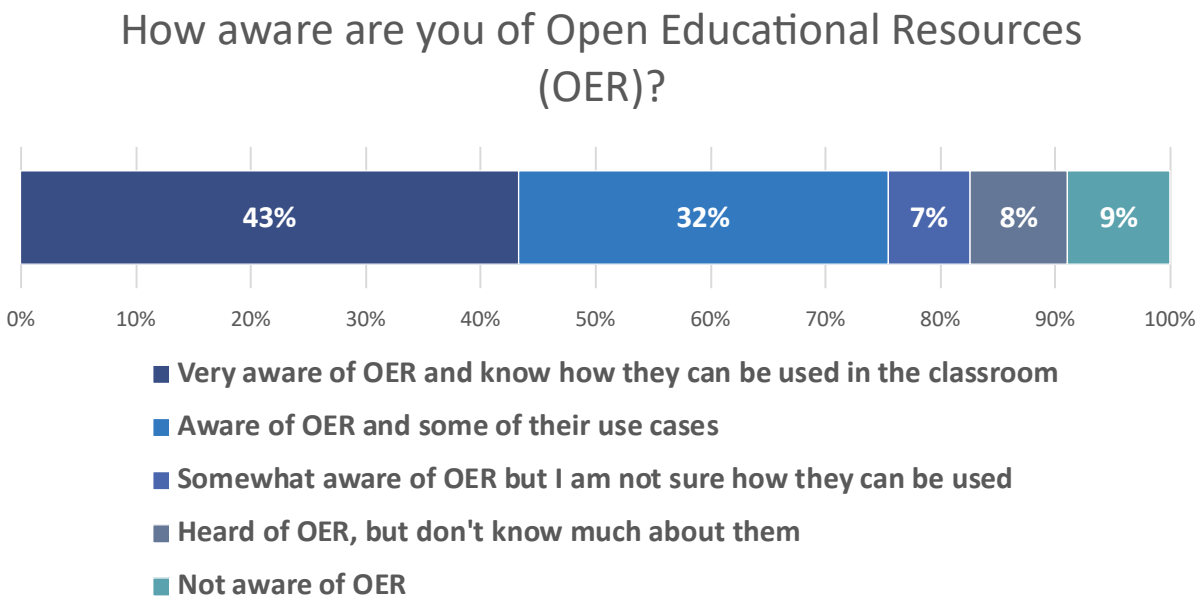
"The institution needs to provide more flexibility in course design and more requirements for instructors to engage in professional development to improve their instructional delivery and techniques."

OPEN EDUCATIONAL RESOURCES (OER)

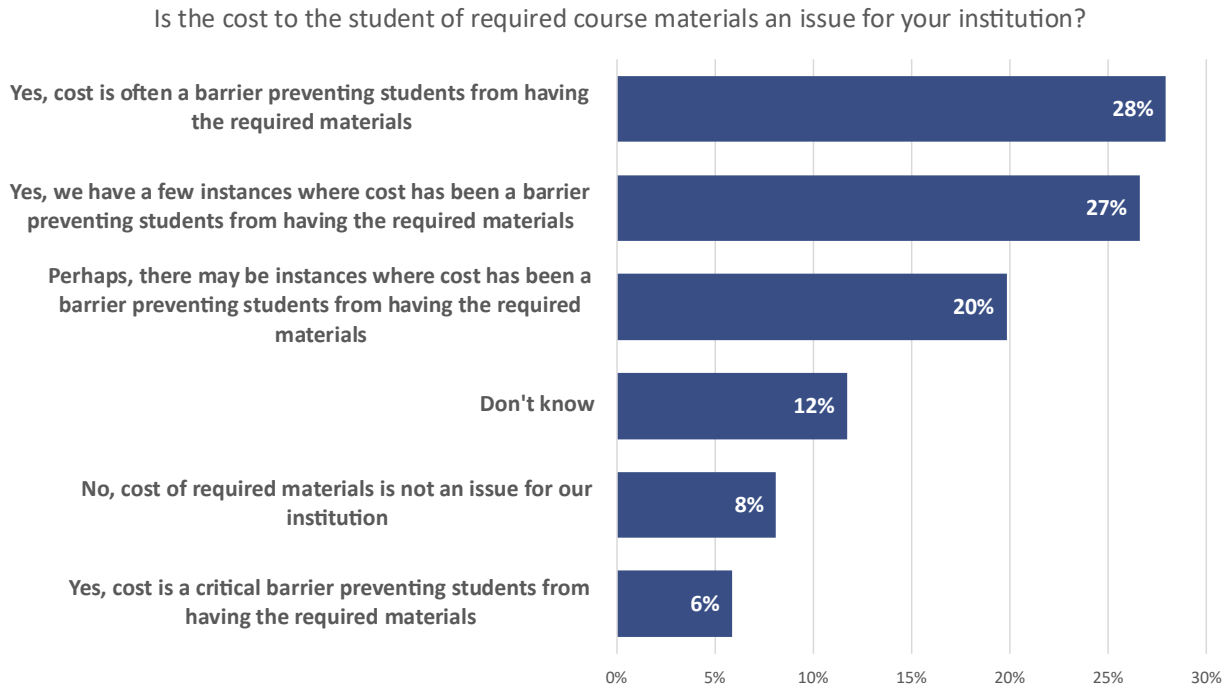
The CDLRA uses the Creative Commons definition for open educational resources (OER), which defines them as "teaching, learning, and research materials that reside in the public domain or have been released under an open license that permits their free use and re-purposing by others."

The Fall Survey asked respondents a series of questions about OER to investigate awareness, use, and policy development.

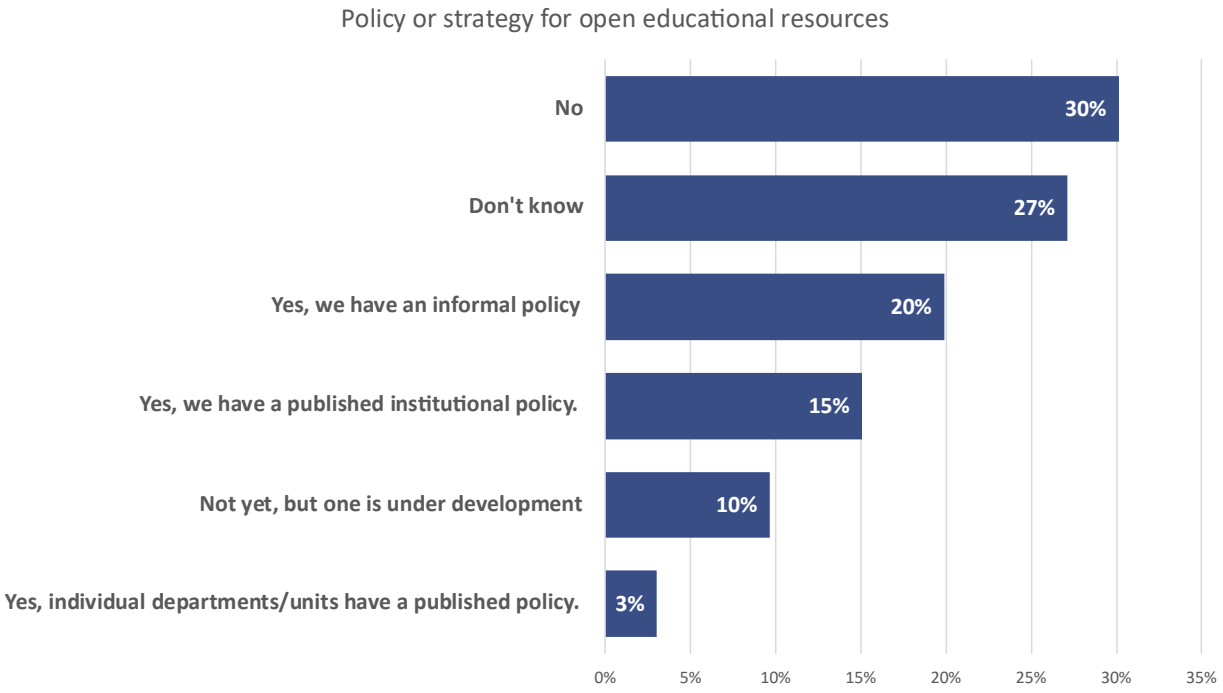
The majority of respondents (75%) are aware of OER and familiar with at least some of their uses. Very few respondents reported having either no awareness of OER (9%) or having heard of them but not knowing much about them (8%).



Over half of the respondents (61%) indicated that the cost of required course materials was an issue for at least some students at their institution: 6% identified cost as a critical barrier, 28% reported that cost is often a barrier, and 27% reported that there have been a few instances where cost has been a barrier. Only 8% of respondents reported that the cost of required materials was not an issue for students at their institution, and an additional 12% didn't know.



The Fall Survey also asked respondents whether their institution had a policy or strategy for OER use and/or other free course materials. More than half of respondents either had no policy (30%) or did not know whether they had a policy (27%). A minority of respondents reported having an informal institutional policy (20%) or a published institutional policy (15%).



Collectively, the results show that OER awareness is prevalent within Canada; however, few institutions have formal published policies to guide OER use. There is also some indication that the cost of course materials is a barrier for at least some students at many institutions, which is a challenge that OER can help overcome.

DISCUSSION AND CONCLUSION

The findings demonstrate an increasing demand for technology use in teaching and learning. This demand persists despite our current context, which permits a full return to in-person learning akin to pre-pandemic times. In particular, respondents reported that greater technology use (regardless of modality) is expected in post-secondary education alongside growth in partially online (hybrid) learning experiences. Fully online learning offerings are also expected to grow but to a lesser extent than hybrid offerings. The perception exists among respondents that faculty and students want the option of teaching/learning online at least some of the time.

Yet, this trend toward greater technology use is not without challenges. There appears to be a gap between faculty interest in teaching with technology and their skills and know-how to do so effectively. Respondents also identified effective instructional practices for teaching with technology as a pressing challenge. Additionally, professional development for faculty is rarely mandated at institutions, and a sizable proportion of respondents report that no professional development is offered. Faculty burnout is one of the most pressing challenges identified by respondents, which also impacts the overall capacity of faculty to undertake voluntary professional development. The perception that AI use will become a normal part of teaching and learning at the post-secondary level also has reinforced concerns about academic integrity related to technology use and online learning contexts.

The growth of hybrid and online course offerings holds the potential to create more equitable and inclusive learning environments while creating learning opportunities that can serve a more diverse set of learners as opposed to in-person learning on its own. Driving factors that impact student choice of modality (if and when a choice exists) align with issues related to EDI. For example, students who have competing priorities such as caregiver or work responsibilities may not be able to undertake post-secondary studies if online or hybrid course options are unavailable. Indigenous students may prefer to learn online to avoid having to move away from their home communities in order to pursue a degree or diploma.

Tracking and understanding how OER awareness, use, and policy development are changing over time, along with the impact of the cost of materials on students, provides information that can be used to identify and reduce additional barriers for students.

Concluding Thoughts

The data overwhelmingly points to continued change, driven in part by a desire for technology-enhanced learning experiences. In order for digital learning initiatives to be effective, equitable and inclusive, and of high quality, the tension between the need for faculty training and the capacity of faculty (e.g., time and energy) to undertake professional development must be overcome. The ability of institutions to deliver quality hybrid, online, and technology-supported in-person courses is critical from an EDI standpoint. Technology-mediated learning experiences open the doors to post-secondary education for many previously underrepresented learners and can support the success of all learners by providing alternative ways to meet student needs beyond traditional face-to-face learning.

As technology use and online and hybrid offerings continue to grow, further research is needed to understand many of the findings presented in this report in greater detail. For instance, the findings clearly identify key challenges associated with digital learning; however, the nature of our survey design does not permit an in-depth investigation as to why these challenges persist or how they might be overcome. Our hope is that this report, and the CDLRA's research work in general, acts as a springboard for new research studies that can examine the topics covered in our surveys in more depth to explore the nuances and intricacies behind the broader findings presented in our reports.

METHODOLOGY

Information for this report comes from the 2023 Spring and Fall Pan-Canadian Digital Learning Surveys. The Spring Survey was open from May 1 to June 30, 2023, and the Fall Survey was open from September 11 to October 13, 2023.

The universe of interest for the 2023 surveys consists of all publicly funded post-secondary institutions in Canada. Almost all universities in Canada are funded provincially.

Institutions that are not included in the roster include Canadian private for-profit universities, most of which are very small and fully private career colleges and institutes.

Our 2023 list of publicly-funded institutions included:

- 82 universities (including Francophone colleges of Anglophone universities)
- 80 colleges outside Québec
- 51 CEGEPs
- 21 private subsidized colleges in Québec

Participants

438 individuals responded to the Spring Survey, of which 394 provided responses in English and 44 in French. Participants indicated that they were located at 126 unique institutions across Canada. They came from all provinces and territories except for Nunavut. Specifically, participants were in Alberta (18), British Columbia (68), Manitoba (9), New Brunswick (105), Newfoundland and Labrador (2), Northwest Territories (1), Nova Scotia (99), Ontario (66), Prince Edward Island (20), Quebec (38), Saskatchewan (10), and Yukon (2).

For the Fall Survey, 438 individuals responded, of which 360 provided responses in English and 78 in French. All provinces and one territory were represented in the Fall data. There were no participants from the Northwest Territories or Nunavut. Specifically, participants were in Alberta (11), British Columbia (55), Manitoba 8), New Brunswick (56), Newfoundland and Labrador (4), Nova Scotia (170), Ontario (72), Prince Edward Island (10), Quebec (45), Saskatchewan (6), and Yukon (1).

Respondent roles included administrators, teaching and learning leaders, faculty, and other staff (such as instructional designers, educational developers, and librarians). Due to a low number of faculty responses in all provinces outside the Maritime region, faculty responses are excluded from the Pan-Canadian Report. The 2023 Pan-Canadian Report includes the findings from 275 administrators and staff for the Spring Survey and 254 administrators and staff for the Fall Survey.

Survey Outreach

The CDLRA research team designed the questionnaires based on prior CDLRA surveys from 2017 to 2022. Potential respondents on the roster received an email invitation to participate in the survey. Each survey invitation included a link to the online survey form. The outreach email and questionnaire content were identical in both the English and French versions. The link to the survey was also shared on the CDLRA's social media channels and included in CDLRA sponsor and partners email newsletters and social media posts.

The Spring Survey included a total of 20 questions, 14 of which were displayed to all respondents. Of the remaining six questions, three were displayed to respondents who indicated they had taught over the past 12 months, and three were displayed to respondents who indicated they had not taught over the past 12 months. The survey also included three optional open-ended questions, where respondents were invited to provide an in-depth response.

The Fall Survey included a total of 12 questions, seven of which were displayed to all respondents. Of the remaining five questions, two were displayed to any respondents who indicated they had taught over the past 12 months, and three were displayed to respondents who selected administrator or teaching and learning leader as their role. The survey also included one optional open-ended question, where all respondents were invited to provide an in-depth response. At the end of the Fall Survey, respondents were asked if they were willing to answer a few more questions on AI use at their institution. If they said "yes," they were then provided with one additional multiple-choice question and two optional open-ended questions.

In both surveys, several questions had a potential follow-up (either multiple choice or open-ended), which was only displayed if the respondent made specific choices to the primary question.

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TO SIGN UP TO RECEIVE INVITATIONS TO PARTICIPATE IN CDLRA RESEARCH STUDIES, PLEASE CLICK THE LINK BELOW OR SCAN THE FOLLOWING QR CODE:

Sign up here: https://forms.office.com/Pages/ResponsePage.aspx?id=qjiiwMnnck-ocf2CQaAszAJpQHGmrN1Nsxb6jGTP1AZUNlNKWVQ0RUZOOTBJSUZWSElNREFISktGTS4u

For more information about the CDLRA team, please visit: http://www.cdlra-acrfl.ca/our-team/