Generative AI and the future of education

How higher education institutions, their employees and students are using AI to drive success.

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Introduction - Generative AI is transforming education

AI-powered productivity and creativity tools have been publicly available for about two years. In that short time, they've made major inroads into how people work – including how they learn. The way higher educational institutions navigate the rise of AI will determine how they're able to support success of students and educators down the road.

In August 2024, KPMG Canada conducted a poll to gain insight into usage and adoption of generative AI among Canadian adults aged 18 and older. The following reflects how 423 student respondents use generative AI today and plan to use into the future.

When thinking about the usage of generative AI in a higher education setting, three applications stand out:

01
Enhancement of student experience

Enabling students to leverage the power of data and technology while continuing to enhance their critical thinking skills.

02
Application of AI in administrative processes

Driving productivity and cost efficiency through the usage of AI.

03
Application of AI commercially

Institutions hold a significant amount of data and research. In partnership with other organizations, models can be created to use the research and insights to contribute to society.
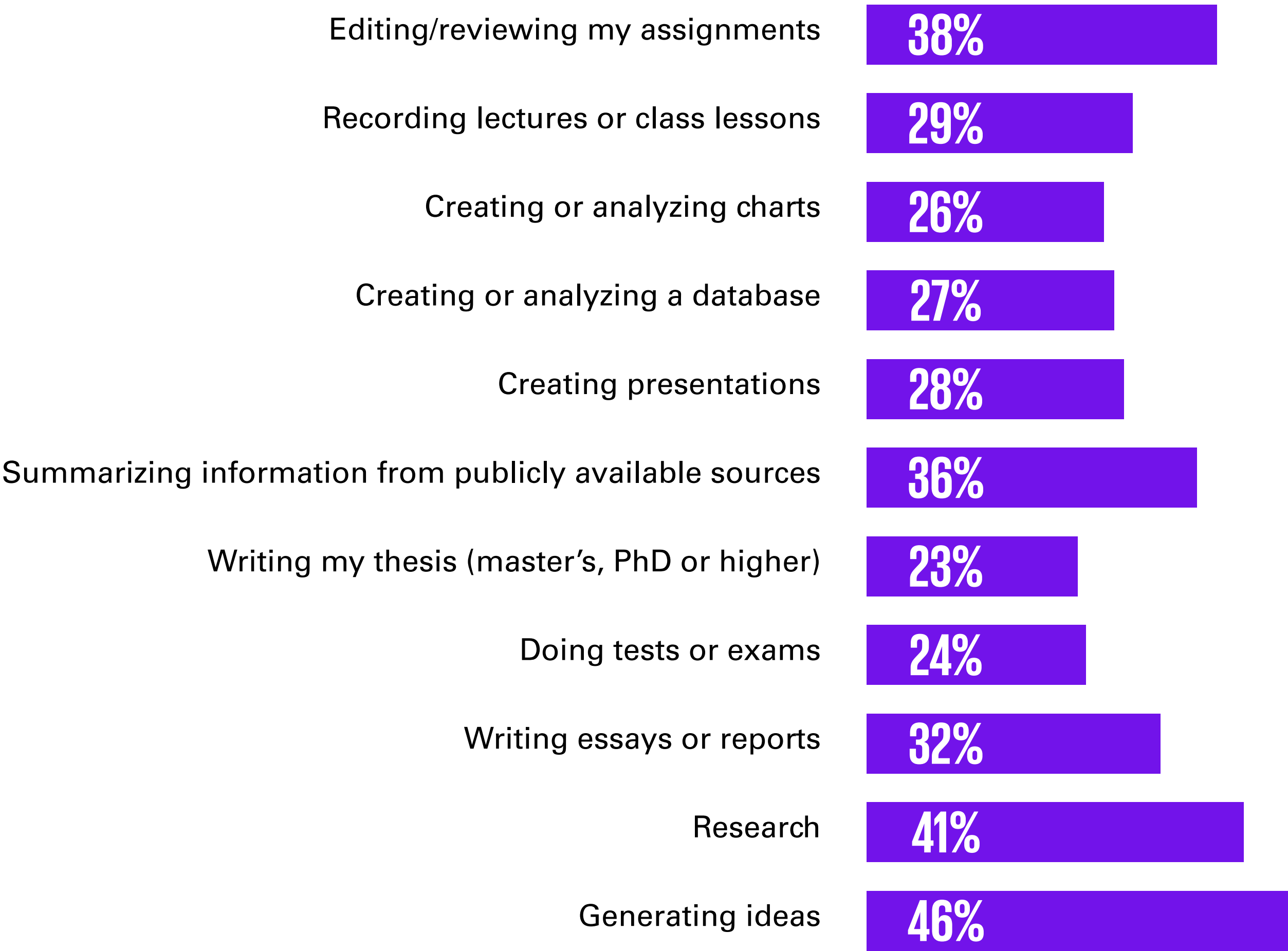
Student perspective

Pros and cons: How students use generative AI

For educational institutions, generative AI presents both advantages and opportunities. This technology produces natural-sounding text from well-phrased prompts. We learned from our student poll that 59 per cent of students are using it in their coursework, up from 53 per cent last year. They are using it to brainstorm ideas (46 per cent), do research (41 per cent), summarize information (36 per cent), and write assignments (32 per cent).

What benefits are students gaining from generative AI?

From our poll, students identified a few benefits of AI such as: saving time (68 per cent save between 1 and 5 hours per week) and getting better grades (74 per cent). 75 per cent say it has helped improve the quality of their coursework and 79 per cent feel the tool boosts their creativity and clarifies complex readings and issues.

Use	Percentage
Editing/reviewing my assignments	38%
Recording lectures or class lessons	29%
Creating or analyzing charts	26%
Creating or analyzing a database	27%
Creating presentations	28%
Summarizing information from publicly available sources	36%
Writing my thesis (master's, PhD or higher)	23%
Doing tests or exams	24%
Writing essays or reports	32%
Research	41%
Generating ideas	46%

> # "
> # Higher education institutions are now at a pivotal juncture towards shaping how their students interact with generative AI.

Embracing the usage of generative AI and training students to harness its power responsibly and intentionally - is the clear path forward. While many higher education institutions have established governance policies, having the right framework in place will be essential to accelerating the adoption and delivery of AI-enhanced student journeys.

CJ James
Partner
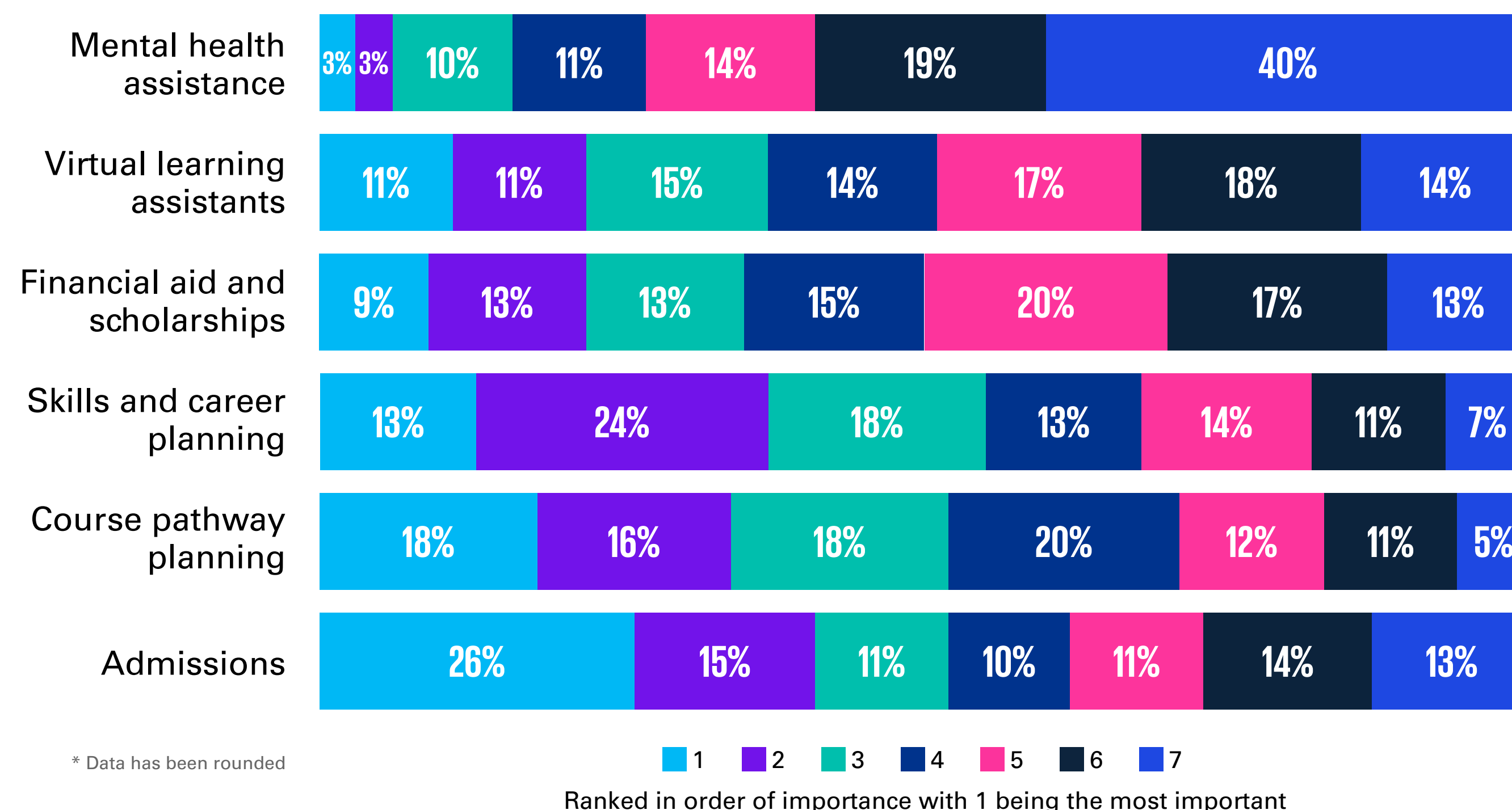National Industry Leader, Education
KPMG in Canada

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Getting ahead of the generative AI learning curve – where the opportunities are:

The usefulness of generative AI outweighs the drawbacks for many students. They recognize AI's growing importance and see its use skyrocketing in other settings and its applicability for their career track. As a result, they are eager to have responsible and skilled AI use become part of their own training and educational programs.

Students plan to use generative AI to prepare for further education and for their future workplace. Respondents wanted to see more generative AI activity at their institutions in these areas:

- Skills and career planning (55 per cent)
- Admissions (52 per cent)
- Course pathway planning (52 per cent).

	1	2	3	4	5	6	7
Mental health assistance	3%	3%	10%	11%	14%	19%	40%
Virtual learning assistants	11%	11%	15%	14%	17%	18%	14%
Financial aid and scholarships	9%	13%	13%	15%	20%	17%	13%
Skills and career planning	13%	24%	18%	13%	14%	11%	7%
Course pathway planning	18%	16%	18%	20%	12%	11%	5%
Admissions	26%	15%	11%	10%	11%	14%	13%

* Data has been rounded

Ranked in order of importance with 1 being the most important
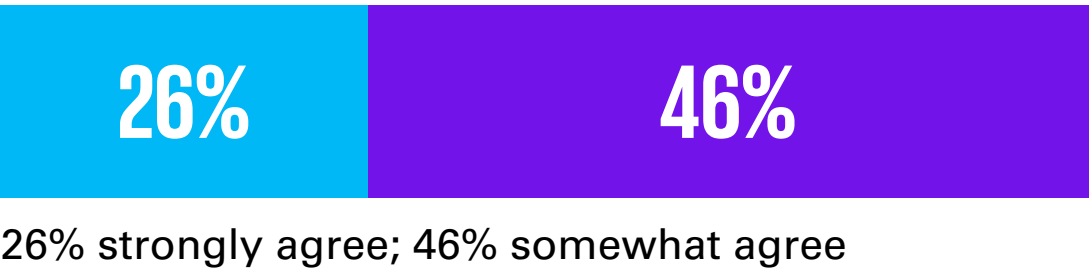
Understanding AI risks

Students are aware of the risks of using generative AI and understand the privacy (75 per cent), intellectual property (72 per cent) and cybersecurity (72 per cent) implications.
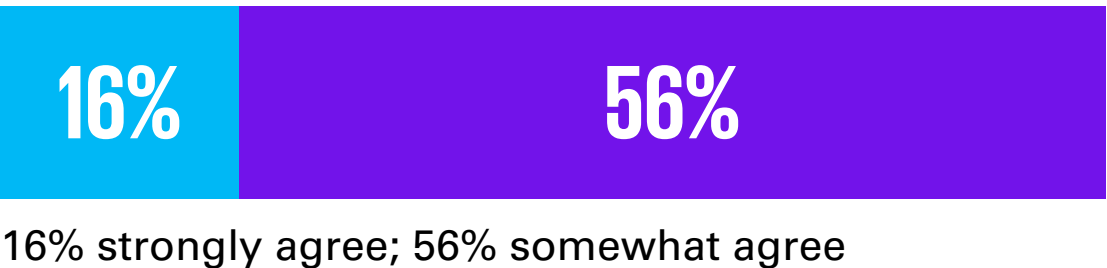
75% Privacy

72% Cybersecurity

72% Intellectual property
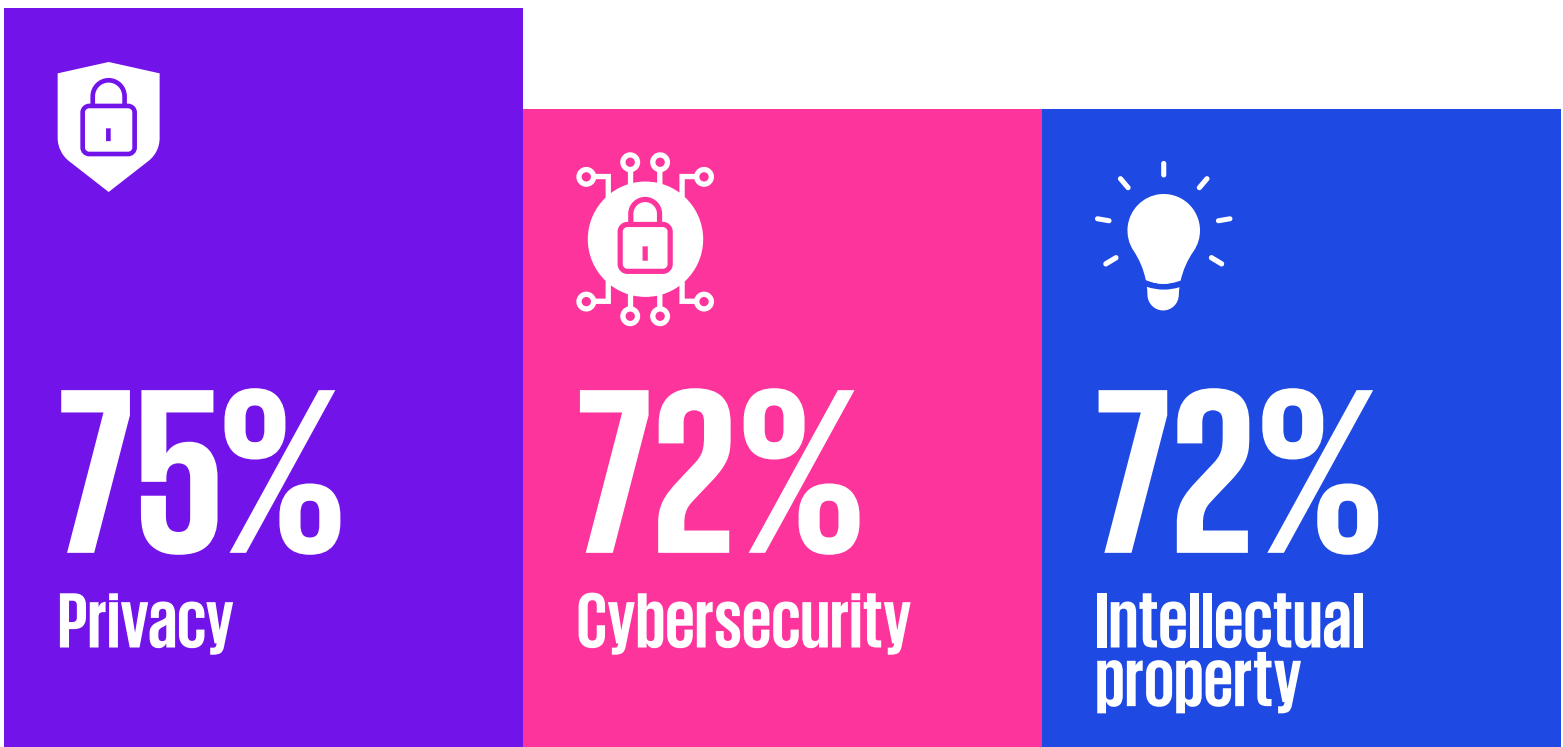
I am aware of and understand what happens to the information I enter into generative AI queries/prompts

| 19% | 58% |

19% strongly agree; 58% somewhat agree
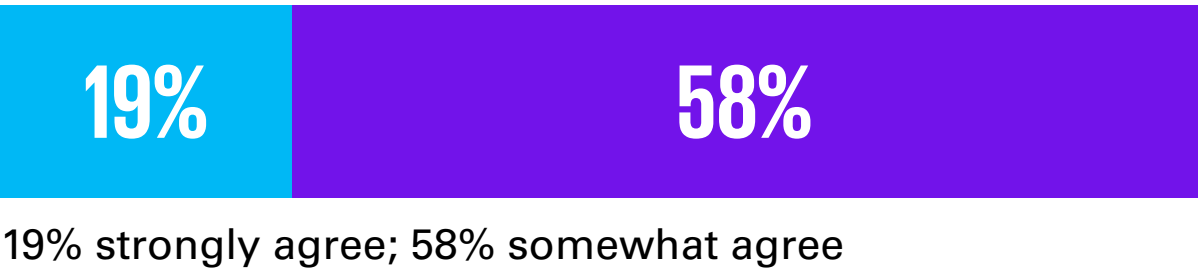
I am aware of the intellectual property risks of using generative AI tools for school

| 26% | 46% |

26% strongly agree; 46% somewhat agree

I am aware of the cybersecurity risks of using generative AI tools for school

| 16% | 56% |

16% strongly agree; 56% somewhat agree

I am aware of the privacy implications of using generative AI tools for school

| 21% | 54% |

21% strongly agree; 54% somewhat agree

"

Seven in 10 students are saying they are turning to generative AI for help rather than their instructor.

Here is an opportunity for students as well as faculty to clearly articulate the benefits of generative AI to drive trust between students and educators and to redeploy time towards other learning activities incorporating trusted AI.

Jameel Ahamed

Partner
Technology Strategy & Digital Transformation
KPMG in Canada

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How can higher education institutions help and train students to use AI effectively?

Students have acknowledged they need more support in the use of AI. Higher education institutions need to build a foundation and articulate policies that empower students to leverage generative AI in ways that augment their knowledge and skillsets, while using it responsibly.

Instructors may also find themselves with more time as well, which could help the institution optimize costs.

With seven in 10 students saying they are turning to generative AI for help rather than instructors, faculty members may find their roles shifting to higher-value tasks, including enhancing the student journey and engaging in high-level research in the use of AI.
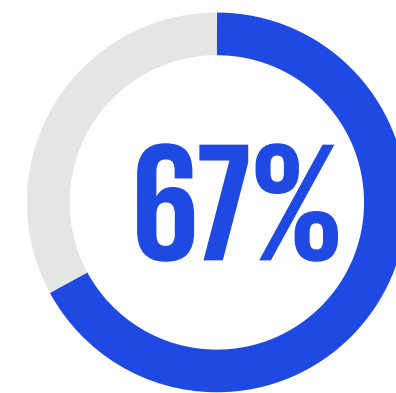
67% say that while they get better results / answers using generative AI, they don't think they're learning or retaining as much knowledge
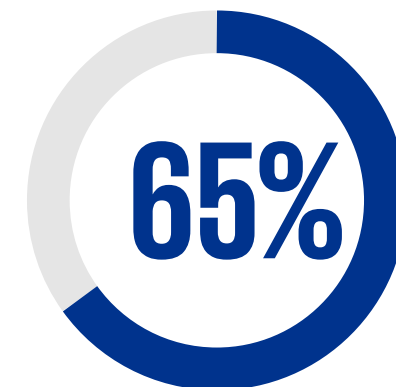
65% say that they still think they are cheating whenever they use Generative AI (although they continue to use it)
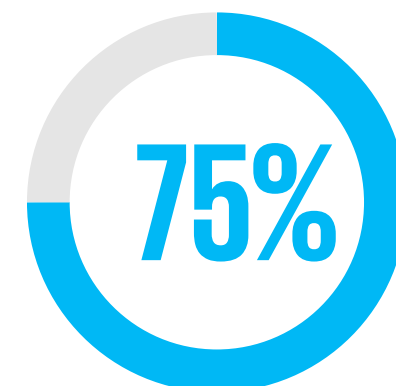
75% say that their institutions use tools to detect whether generative AI has been used in student work
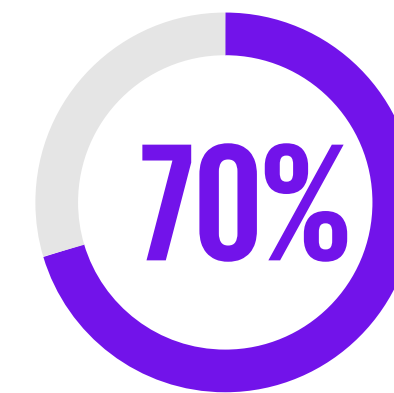
70% say that they are turning to generative AI tools for help rather than asking the instructors
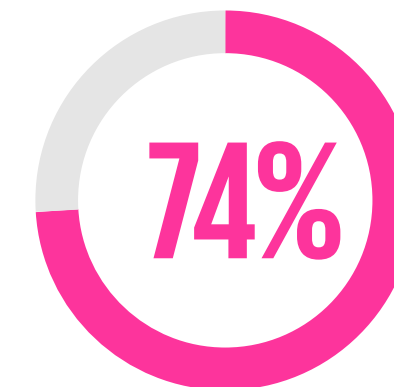
74% say that they think educational facilities need to be smarter about how they review admissions to ensure fairness in the admissions process

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Employee
perspective

How employees use generative AI

It's not only students that are exploring generative AI.

A KPMG poll on generative AI adoption in the workplace found that 70 per cent of employees in higher education institutions were using these tools. 26 per cent rely on it daily or on every project, and 64 per cent say it saves them at least one to two hours per week.

70%
of employees in higher education institutions use generative AI
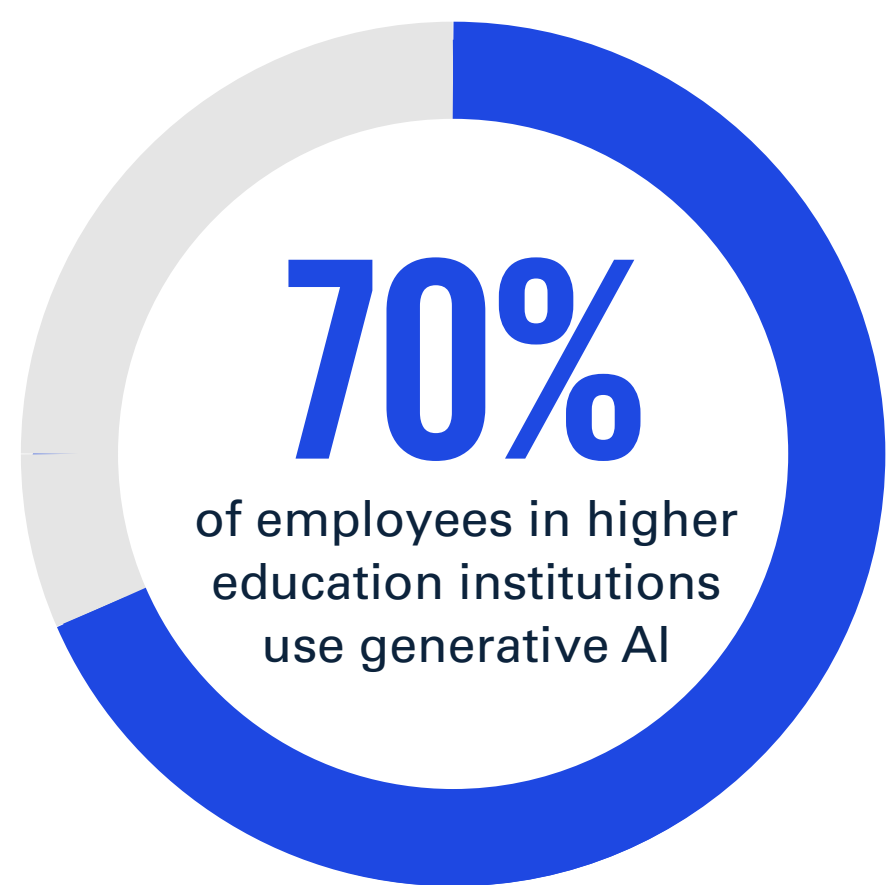
How are respondents in educational institutions redeploying time saved from using generative AI

I am spending more time on high-value tasks (strategic planning, improving operations, etc.)	43%
I am spending more time brainstorming new ideas (with colleagues or individually)	24%
I am spending more time connecting with and/or visiting with clients/customers	18%
I am spending more time on professional development (i.e. upskilling, training, taking courses, reading)	22%
I am starting new projects and/or taking new tasks more quickly than before	24%
I am spending more time on myself (exercising, reading, running errands, etc.)	26%
I am spending more time with my family (caregiving, leisure activities, etc.)	22%
I have a more active social life	17%
Not sure	2%

How employees use generative AI

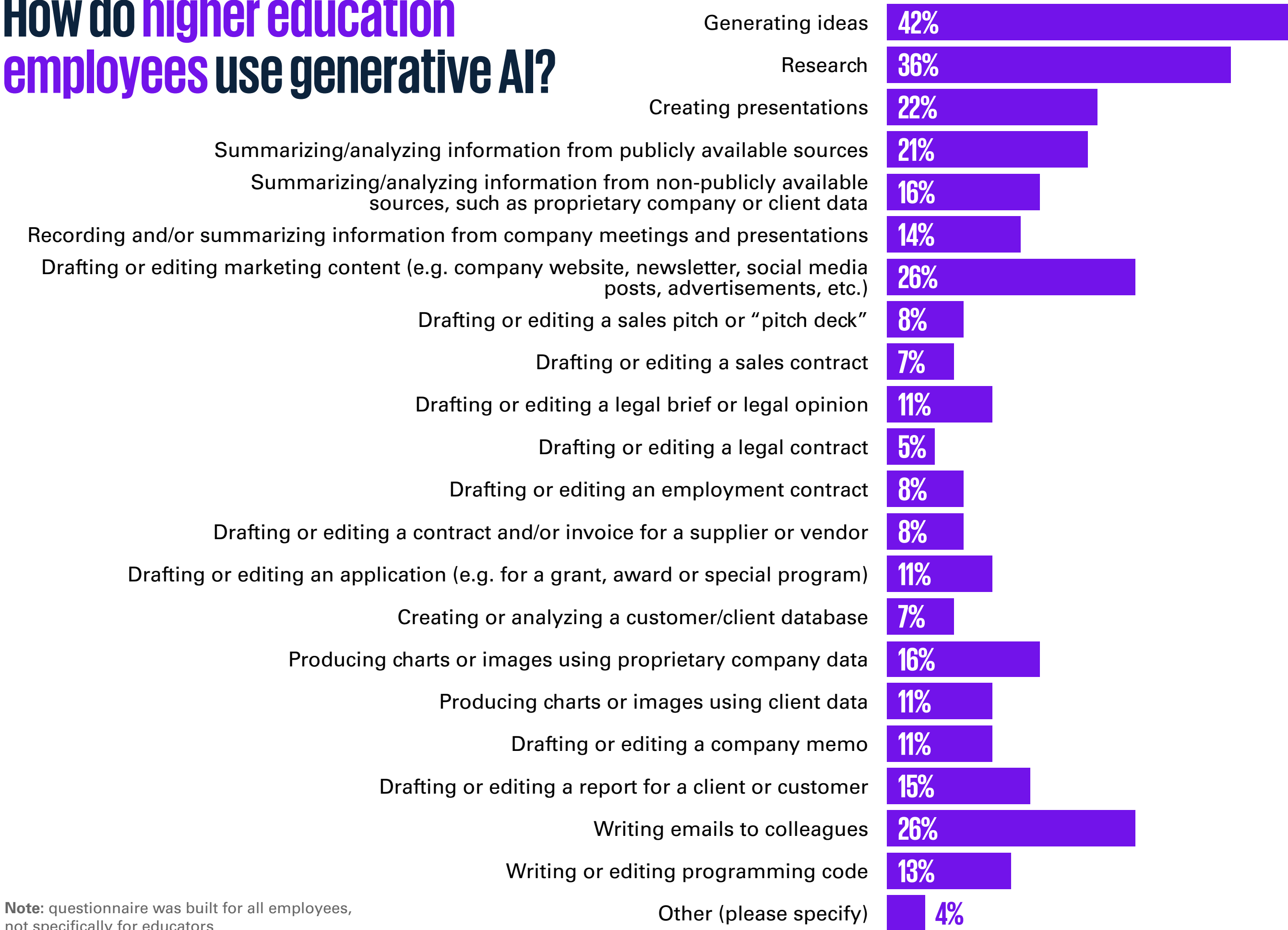With generative AI picking up on administrative tasks, employees are finding more time for personal and professional growth. Employees now devote the hours they have saved to performing high-value tasks, starting new projects, professional development and other pursuits. Embracing the technology does more than boost efficiency and help cut costs – it helps higher educational institutions retain talent and attract new skilled employees.

How do higher education employees use generative AI?

Activity	%
Generating ideas	42%
Research	36%
Creating presentations	22%
Summarizing/analyzing information from publicly available sources	21%
Summarizing/analyzing information from non-publicly available sources, such as proprietary company or client data	16%
Recording and/or summarizing information from company meetings and presentations	14%
Drafting or editing marketing content (e.g. company website, newsletter, social media posts, advertisements, etc.)	26%
Drafting or editing a sales pitch or "pitch deck"	8%
Drafting or editing a sales contract	7%
Drafting or editing a legal brief or legal opinion	11%
Drafting or editing a legal contract	5%
Drafting or editing an employment contract	8%
Drafting or editing a contract and/or invoice for a supplier or vendor	8%
Drafting or editing an application (e.g. for a grant, award or special program)	11%
Creating or analyzing a customer/client database	7%
Producing charts or images using proprietary company data	16%
Producing charts or images using client data	11%
Drafting or editing a company memo	11%
Drafting or editing a report for a client or customer	15%
Writing emails to colleagues	26%
Writing or editing programming code	13%
Other (please specify)	4%

Note: questionnaire was built for all employees, not specifically for educators

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43% of the respondents who are employed in higher educational institutions have indicated

that they are redeploying time saved from use of generative AI towards more high-value tasks such as strategic planning, managing, improving operations and more. This clearly demonstrates the power of AI that can be harnessed to drive cost efficiency through increased productivity.

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Rob Clayton

Partner
Education Sector
KPMG in Canada

The future of learning incorporates generative AI

For a sector so rooted in tradition, change can be challenging. At the same time, higher education institutions have always moved with the times to enhance higher educational development. Generative AI can now perform administrative tasks with greater efficiency to support both student and institutional success.

By querying large datasets, for instance, administrators can gain insight into student and department performance. Educators can use generative AI to develop personalized learning experiences and recruitment specialists can build tailored materials to attract future students. In addition, they can use other data sets across the sector where these institutions have partnerships.

Our poll results suggest that generative AI usage and exploration will only accelerate. Future-forward educators see generative AI as part of the future of higher education and are now laying the groundwork. Embracing the tools and directing their use in ways that support and enhance the value of educational programs is the best way to prepare students and support employees in the days ahead.
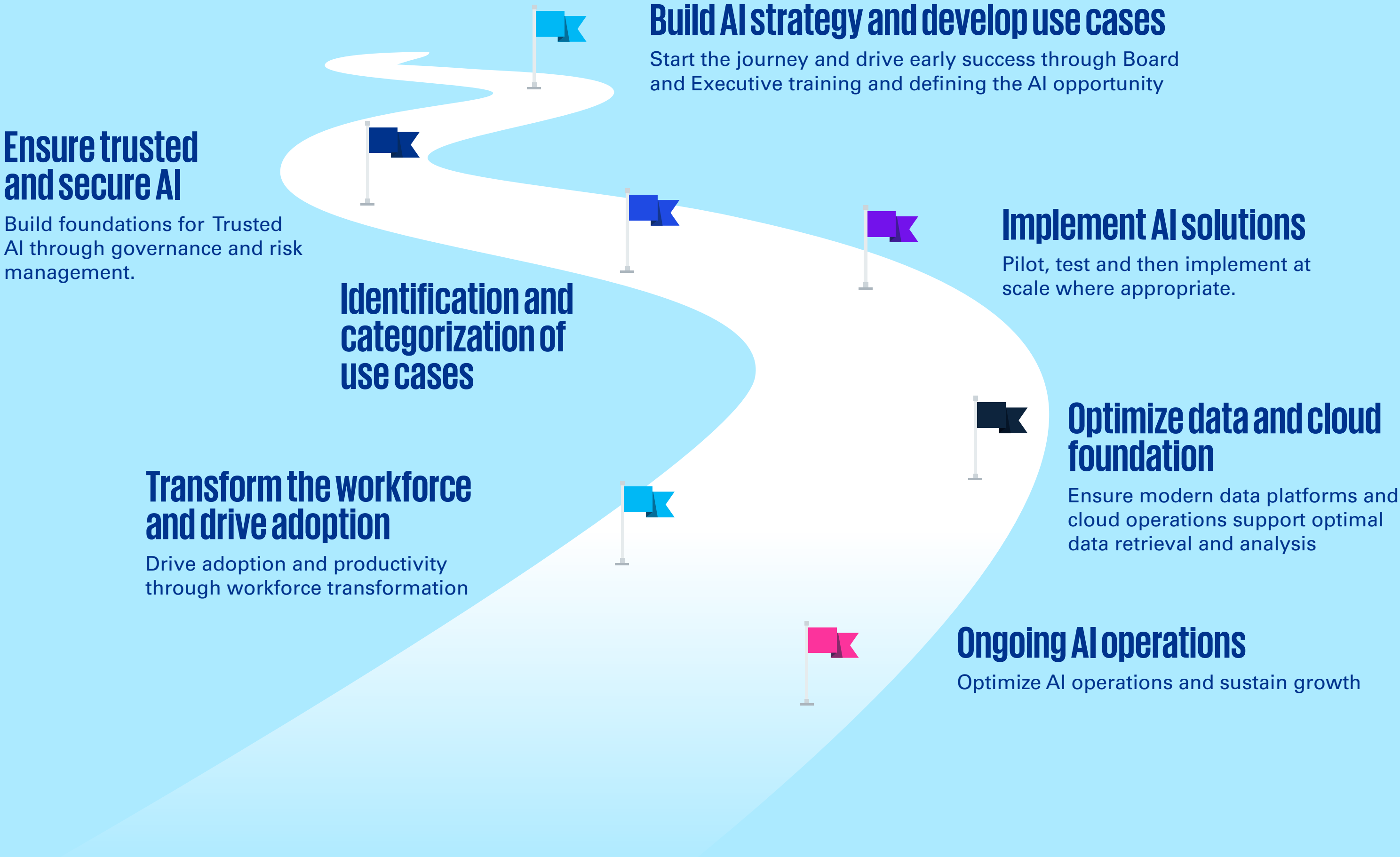
Learn more

How KPMG can help

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Technology Strategy &
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Build AI strategy and develop use cases

Start the journey and drive early success through Board and Executive training and defining the AI opportunity

Ensure trusted and secure AI

Build foundations for Trusted AI through governance and risk management.

Implement AI solutions

Pilot, test and then implement at scale where appropriate.

Identification and categorization of use cases

Optimize data and cloud foundation

Ensure modern data platforms and cloud operations support optimal data retrieval and analysis

Transform the workforce and drive adoption

Drive adoption and productivity through workforce transformation

Ongoing AI operations

Optimize AI operations and sustain growth

Research methodology

About the KPMG Generative AI Adoption Index Survey

KPMG surveyed 2,551 Canadians (aged 18+) from August 6-21, 2024, using Sago's Methodify online research platform to gauge the adoption and use of generative AI.

Included in the survey were 423 students attending university, college, vocational, or high school educational institutions.

Of the total students surveyed, 250 students, or 59 per cent, use generative AI for their schoolwork. That's up 7 percentage points from 52 per cent in 2023.

Where are they currently enrolled?

67%	20%	13%
are in university, including post-graduate	are in college	are in technical, trade, vocational schools or high school

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kpmg.com/ca/AI