

● **Developing a Framework**
● for the
● **Enablement of AI Integration**
● at
● **Brock University**

Developing a Framework for the Enablement of AI Integration at Brock University

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Summary

This document provides a comprehensive overview of artificial intelligence in higher education. It addresses the rapid evolution of AI tools, their use in teaching, research, and administration, and the governance structures required to ensure ethical, responsible, and effective adoption. Both the current state of AI usage at Brock University and the opportunities for future integration across the institution are reviewed. The purpose is to bring the entire Brock community — faculty, staff, students, and administrators — onto a common foundation of knowledge, creating shared understanding of the benefits, challenges, and responsibilities associated with AI. In this sense, it prepares the institution for the critical next step: the development of a comprehensive AI strategy. The document culminates in the proposal of such a strategy, outlining parameters, short-term actions, and long-term measures that position Brock University to engage with AI in a way that supports its mission, enhances competitiveness, and strengthens its role in the Niagara region and beyond.

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1. Introduction

Artificial Intelligence (AI) is not simply another technological wave. Instead, it challenges higher education in **fundamental ways**. It compels us to ask deep questions: *What is knowledge? What is learning? What skills should graduates possess to thrive in an AI-driven society?* It forces renewed emphasis on **critical thinking, creativity, hands-on skills, ethical judgment, and human adaptability** — qualities less likely to be automated. At the same time, critical thinking and communications skills are among the most desirable attributes that business leaders seek in graduates.

The impact of AI is visible across three major domains in higher education: **teaching, research, and administrative services**, where it has the potential to transform pedagogy, accelerate discovery, and streamline institutional operations. Importantly, AI can also **level the playing field**, allowing smaller institutions with the right strategy and implementation to match or even surpass the capabilities of larger, better-resourced universities. This transformation offers both opportunity and urgency for Brock University to position itself strategically.

This document is meant to provide the context required to implement an effective AI strategy for Brock University and culminates in a specific suggestion for an AI strategy.

1.1. Brief Overview of AI

Artificial Intelligence refers to the branch of computer science concerned with creating systems capable of performing tasks that normally require human intelligence. These include reasoning, problem-solving, perception, language understanding, and decision-making. Modern AI spans a spectrum from narrow applications, such as chatbots or image recognition, to advanced systems capable of autonomous learning and adaptation.

One of the most significant advancements in recent years is **generative AI** (GenAI), a class of systems that can create new content (text, images, audio, video, and even code) based on input prompts. This is typically powered by **Large Language Models** (LLMs), such as GPT-5 or Claude, which are trained on massive datasets and can generate human-like, context-aware responses. The emergence of **Small Language Models** (SLMs), optimized for domain-specific applications, offers improved performance, efficiency, and lower computational demands for targeted use cases. There is also open-source AI that can be run locally (i.e., on local computing infrastructure) and fine-tuned to specific tasks while enhancing privacy.

Contemporary AI systems are increasingly **multimodal**, capable of interpreting and generating multiple types of data simultaneously. This enables applications such as integrated tutoring systems that can process a student's written work, visual diagrams, and spoken responses in real time. Many of these systems are embedded in everyday software platforms such as Microsoft Copilot, Google Workspace, and Adobe Creative Suite, blurring the distinction between "using AI" and routine digital work.

The recent emergence of **reasoning capabilities** of LLMs and their growing size and training have now elevated their proficiency to PhD level across all disciplines of human knowledge. In this context, [Humanity's Last Exam](#) has been established as a benchmark, with 2,500 questions across all disciplines of human knowledge "*from nearly 1,000 subject expert contributors affiliated with over 500 institutions across 50 countries – comprised mostly of professors, researchers, and graduate degree holders.*" LLMs are already capable of answering 25% of the questions correctly, whereas humans remain limited at below 2%. Meanwhile, improvements of LLMs take place over months, not years.

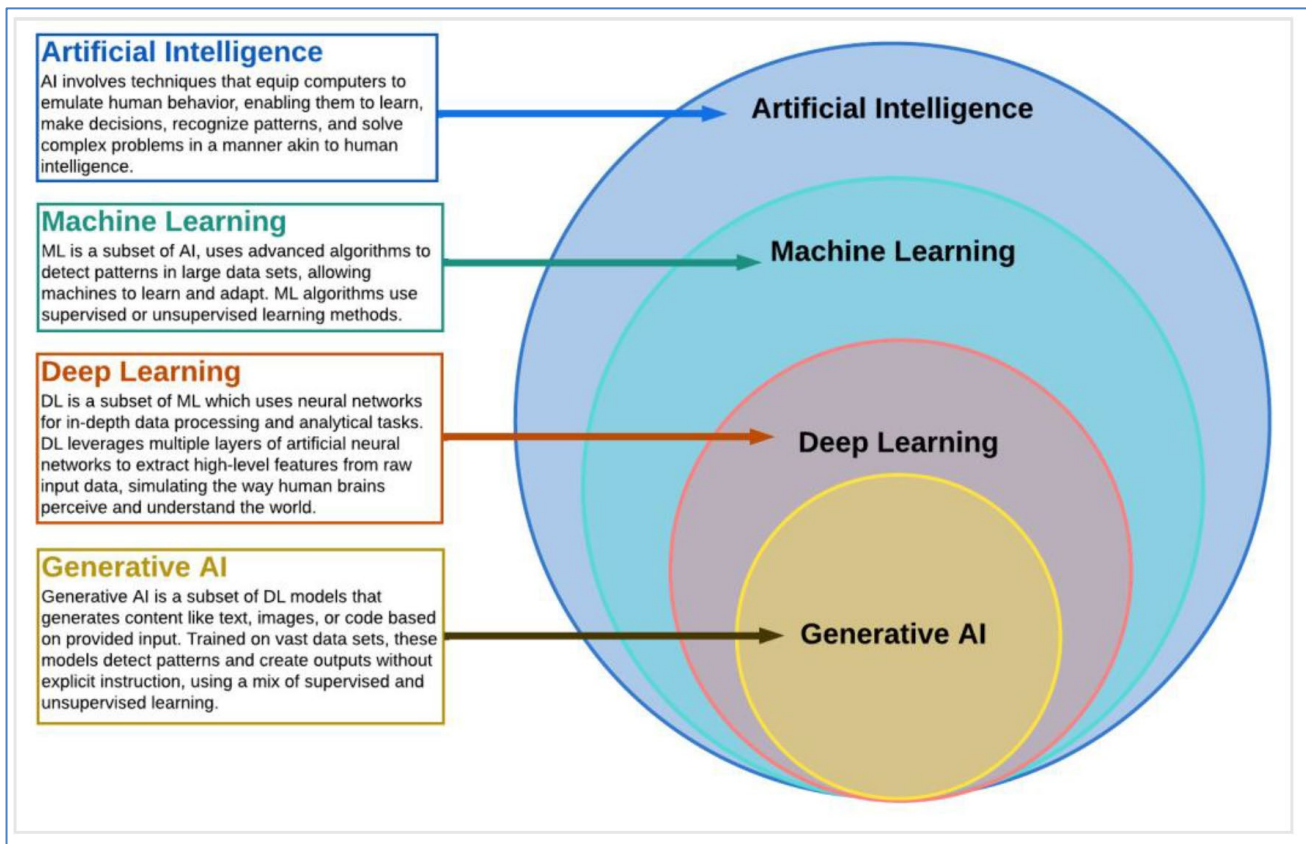


Figure 1.1: Artificial Intelligence, Machine Learning, Deep Learning, and Generative AI (from Zhuhadar and Lytras, 2023).

Agentic AI is another recent development that has major ramifications for society and higher education, including both risks and opportunities. It describes autonomous artificial intelligence systems that can establish goals, create plans, and carry out multi-step tasks with minimal human involvement. In contrast to generative AI, which primarily produces content in response to prompts, agentic AI operates proactively, making decisions and adjusting to real-time conditions through the use of machine learning, natural language processing, and automation. These goal-oriented agents are capable of interacting with other systems, learning from their surroundings, and executing complex, context-specific workflows.

The capabilities of AI are matched by a set of complex challenges. Issues of **bias**, **transparency**, data sovereignty, intellectual property, **privacy**, environmental sustainability, deskilling, cognitive offloading, and over-reliance on automation are now central to institutional discussions. Responsible integration therefore requires clear governance frameworks, user training, and ongoing evaluation to ensure that AI complements rather than compromises human intelligence and values.

Generative AI is redefining what is possible in content creation, data analysis, and decision-making across every sector.

1.2. The Impact of AI on Public and Private Sectors

Across industries, AI is reshaping business models, operational efficiency, and workforce dynamics. In the **private sector**, organizations use AI to:

- **Enhance decision-making** through predictive analytics and real-time data insights.
- **Automate processes** such as invoicing, inventory control, and compliance monitoring.
- **Personalize services**, from e-commerce recommendations to targeted marketing campaigns.
- **Accelerate innovation**, using generative design tools for product development and simulation.
- **Improve customer experience**, deploying chatbots, virtual assistants, and multilingual translation tools.

Generative AI, in particular, is accelerating creative and analytical workflows, reducing time-to-market, and enabling small teams to achieve outputs once requiring large departments.

In the **public sector**, AI supports urban planning, healthcare diagnostics, transportation optimization, and citizen engagement. Governments are increasingly exploring its role in policy modelling, predictive maintenance for infrastructure, and fraud detection in public programs. The integration of AI into public services offers efficiency gains and improved responsiveness, but also raises concerns around equity, accountability, and democratic oversight.

Recent workforce-trend surveys (e.g., 2024 Microsoft Work Trend Index Annual Report) highlight that employees using AI tools report higher productivity, greater creativity, and reduced task fatigue. Organizations adopting AI effectively are characterized by robust **data governance** frameworks, workforce **upskilling programs**, clear **governance models** for evaluating AI tools, and hybrid work strategies integrating human expertise with automated systems.

However, Gen Z students are encountering a new barrier to workforce entry as internships and entry-level positions are increasingly replaced by AI tools. These early career roles, once vital stepping stones, often involved tasks now handled faster and more cheaply by AI. As a result, entry-level opportunities are already diminishing in a changing job market. Still, demand persists for certain skillsets, suggesting that jobs are being redefined rather than eliminated. The future of work may not be about robots replacing people, but about leveraging technology to strengthen skills and create fresh entry points into professional careers.

Challenges with AI remain substantial. Ethical dilemmas over algorithmic bias, data privacy, intellectual property, and **cybersecurity** risks are significant. Job displacement and environmental costs, particularly the energy demands of training large models, add further complexity. **AI-readiness** is now a competitive advantage, enabling organizations to quickly identify, integrate, and manage AI technologies in alignment with their mission and values.

Canada faces a productivity crisis, lagging behind other G7 nations in growth and business adoption of AI. While Canadian researchers have been central to AI breakthroughs, commercialization and use trail global peers. The Canadian AI Adoption Initiative ([CAIAI](#)) calls for a nation-building approach to accelerate economy-wide AI integration. Ten priorities include setting ambitious adoption targets, creating an AI research and data hub, supporting small and medium enterprises (SMEs) with starter packs, clarifying regulation,

investing in dual-use AI, building national skills programs, improving data infrastructure, removing adoption barriers, and showcasing federal adoption. Broad-based adoption is framed as vital for competitiveness and public trust.

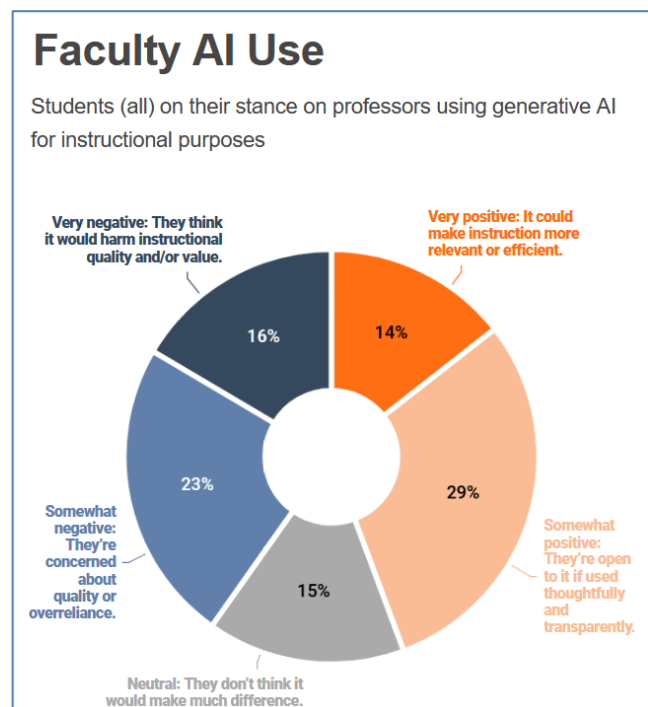
1.3. AI and the Future of Higher Education

Higher education is both a testing ground and a driving force for AI innovation. The changes ahead will define how institutions teach, research, and operate.

Inside Higher Ed recently conducted a [survey](#) on students' use of generative AI, finding that 97% of respondents believe institutions should address AI-related cheating. However, students preferred approaches such as establishing clear AI usage policies or adopting measures like oral examinations and in-class essays to reduce opportunities for dishonesty, rather than relying on detection software or outright bans of technology in classrooms. In fact, [students may view](#) "GenAI as a democratising tool that can help to overcome individual limitations, support diverse approaches to learning, and create more inclusive academic environments".

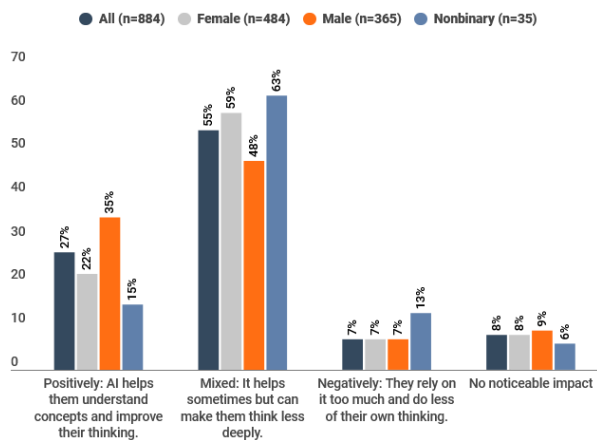
Opinions were also divided on AI's effect on learning: 55% reported that it had both improved and weakened their critical thinking abilities. The top three student uses of AI were brainstorming ideas (55 percent), asking AI questions like a tutor (50 percent), and studying for exams or quizzes (46 percent). Just 16 percent say preparing them for a future shaped by generative AI should be left up to individual professors or departments, **underscoring the importance of an institutional response**. And just 5 percent say colleges don't need to take any specific action at all here. For 18% of students, the presence of AI even raised doubts about the overall value of pursuing postsecondary education.

Figures 1.2-1.4: Key findings from the [Inside Higher Ed AI Survey](#).



Impact on Learning, Thinking

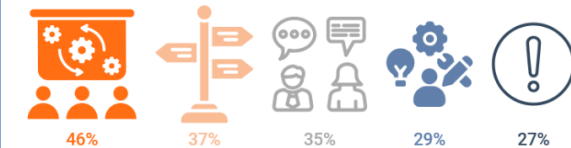
Students who've used generative AI tools for coursework say how they think it's affected their learning and critical thinking skills, all and by gender



Preparing for an AI Future

Top ways students (all) think their college or university should help them prepare for a future shaped by generative AI

- Offer training on how to use AI tools professionally and ethically
- Provide clearer institutional guidance on ethical use vs. misuse of AI tools
- Create space for open discussion about AI's risks and potential
- Include AI skills in relevant majors and career preparation pathways
- Require a course or module on AI literacy (e.g., what AI is, how it works, ethical use)



Educators should embrace AI while rethinking their evaluation and teaching strategies and reflecting on the “why” and “when” of integrating AI into their courses. Instructors should grapple with the philosophical rationale for using these tools and carefully consider the contexts in which they are appropriate. The answers will vary depending on the specific student and situation, and it is the educator’s responsibility to ensure that AI does not replace or diminish the cultivation of essential skills.

Dr. Mohammed Estaiteyeh (Faculty of Education) cautions that, without a national **AI literacy strategy**, Canada risks leaving both students and teachers unprepared to engage with artificial intelligence in education. AI literacy equips learners with the awareness, knowledge, and critical thinking needed to use AI tools safely, evaluate their output, and make informed choices. The right strategy would provide educators with professional development and resources, help students build essential AI literacy, and foster collaboration among stakeholders.

Teaching

AI enables **personalized learning** at scale. Adaptive platforms can modify lesson difficulty, pacing, and delivery method based on student performance, learning style, and engagement patterns. Generative AI supports the creation of discipline-specific case studies, simulations, and problem sets. This can support the merging of large service courses for different disciplines into one course (e.g. Statistics). Automated grading, when applied strategically, and instant feedback can free faculty time for more interactive, high-value engagement with students.

Yet these capabilities also demand **reimagined assessment**. As students gain access to tools that can write essays, solve equations, and generate code, universities must design assignments and evaluations that prioritize **critical thinking, creativity, collaboration, and ethical reasoning** — competencies not easily automated. Faculty development in AI-enhanced pedagogy is crucial to ensuring that these tools deepen rather than diminish learning, and that they enhance the student’s awareness and understanding of their own thought and learning processes.

The recent report [AI for Student Engagement: A Global Review of Emerging Strategies](#) by the Digital Education Council provides an in-depth look at the many areas that AI affects in teaching and learning and the opportunities it offers, including student engagement, student-faculty interaction, content and assessment, instructional delivery, and experiential learning.

Research

In research, AI accelerates discovery by scanning vast literature in seconds, identifying patterns in complex datasets, and generating hypotheses that human researchers can test. Across fields — from medicine and environmental science to linguistics and digital humanities — AI enhances the depth and speed of analysis. New, radical ideas such as virtual labs of AI agents may enable (accelerated) breakthroughs.

It also facilitates **cross-disciplinary collaboration** through shared datasets, interoperable tools, and natural language interfaces that lower barriers between fields. Administrative tasks like grant writing, compliance documentation, and data management can be streamlined, freeing researchers to focus on core intellectual work.

However, integration must be accompanied by **methodological transparency, reproducibility safeguards, and intellectual property protections**. AI guidelines of granting agencies and journals are to be followed. Institutions must invest in secure computing environments, domain-specific training, and ethical guidelines for AI-assisted research.

Large language models (LLMs) present both significant opportunities and notable risks for academic research. Tools such as ChatGPT and Gemini can enhance nearly every stage of the research process and promote interdisciplinary collaboration, yet also pose challenges related to bias, privacy, and citation accuracy. There is an urgent need for AI literacy programs specifically designed for academic researchers, enabling them to **distinguish between basic “AI research assistants” and more advanced “deep research agents”** capable of complex, multi-step analyses across fields.

Researchers who use AI for their work need to keep two facts in mind:

- AI can only find information that has been digitized and fed into the system. This can be a limitation for research but also an opportunity for continued hands-on research in fields such as history and archeology, to name a few.
- Bias and feedback mechanisms within AI systems may narrow the focus of one’s research.

One strategy to widen the scope of AI, highlight potential bias and arrive at better information is to [use different GenAI tools to critique each other’s responses](#).

Administrative Services

AI is redefining **university operations**, including [physical plant operations](#) — an area where Brock shines. Predictive analytics can forecast enrollment trends and student retention risks. Virtual assistants can provide 24/7 answers to student questions. Intelligent scheduling systems can optimize classroom and resource use. AI-driven HR and finance tools can streamline recruitment, onboarding, and budget management.

These tools reduce administrative load, cut costs, and improve service quality. However, implementation must be supported by **data governance, staff training**, and safeguards for decision accountability.

Concerning the development of an AI strategy, many universities split the administrative services category into i) **administration & operations** and ii) **student services** because of the different nature of its respective stakeholders and clients (students vs. employees). Brock University may be well advised to follow this approach.

The AI-Ready University

An **AI-ready university** requires more than acquiring tools — it needs a **comprehensive AI strategy** created collaboratively with representation from academic faculties, research offices, IT services, libraries, student support, centers for teaching and learning, and governance bodies. Such inclusivity ensures the strategy is institution-wide, adaptable, and aligned with academic values. For any university, the ideal AI strategy will support its identity and mission but also the extent to which AI shapes and impacts society. Concerning the latter, the Association of Research Libraries (ARL) and the Coalition for Networked Information (CNI) developed four scenarios in their 2024 report *AI Scenarios: AI-Influenced Futures*, each having different implications for enabling the full potential of AI in the research and knowledge ecosystem.

Equally important is **AI training for all employees**, equipping faculty, staff, and administrators to evaluate, use, and innovate with AI responsibly. This training should balance technical skills with ethical, pedagogical, and operational awareness. The University of British Columbia takes an even wider approach through its [UBC Training Hub](#) and includes student training.

At a high level, rules (policies), access and familiarity are required for adoption of AI across the institution, supported by trust in AI and the use of AI by its users (students, faculty, staff), vendors and partners (industry, government, community). The extent to which AI will be adopted and how it will be used is then largely driven by the local, regional and global culture of the institution.

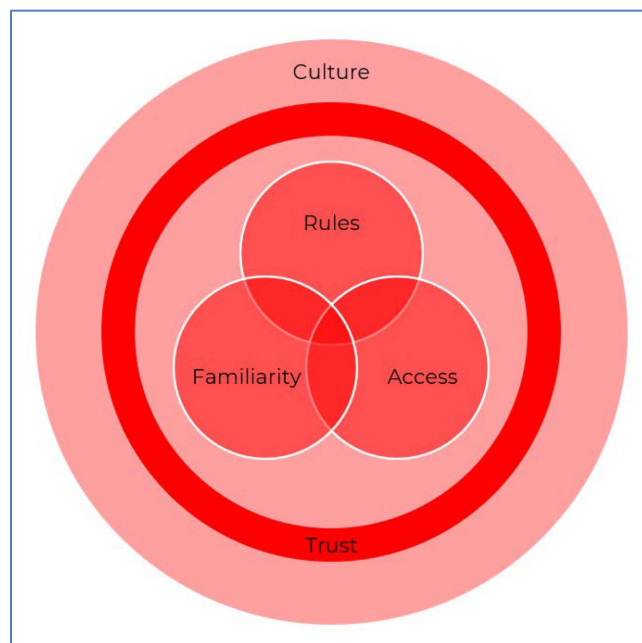


Figure 1.5: Five areas of action concerning the AI-readiness of a university (from the 2024 project *Generative AI in Education: Opportunities, Challenges and Future Directions in Asia and the Pacific*).

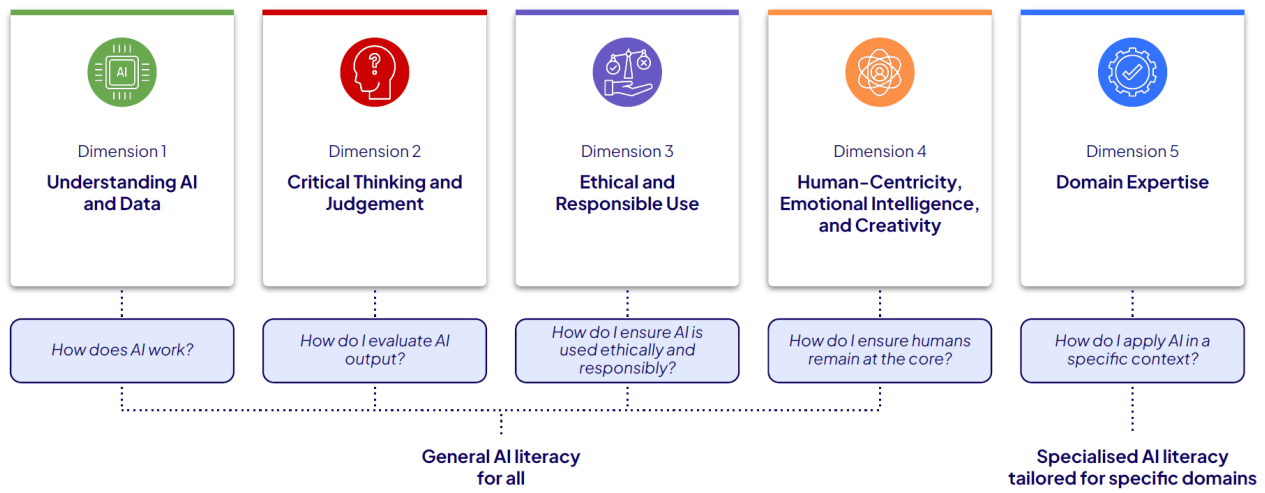
Canadian universities are both challenged by AI and will play a key role in advancing AI skills among its population. A 2025 study conducted by KPMG International and the University of Melbourne ranks **AI training and literacy levels in Canada as 44 out of 47 countries**, and 28 out of 30 advanced economies. While the majority of students wants to be AI ready upon graduation, over 50% of employers find that higher education is not preparing students sufficiently for AI. AI literacy frameworks exist that can help a university prepare its students for an AI world. The Digital Education Council, the Canadian Association of Research Libraries ([CARL](#)) and [Concordia University](#) (*GenAI Quickstart*) have done extensive work on this topic, providing helpful guidance to faculty and students.

In certain areas of private enterprise, an “AI & less educated” skillset now trumps “no-AI & more educated”, in part because employers cannot recruit enough qualified applicants with higher education levels and AI skills. This trend has the capacity to put the reputation of universities at risk and question their value. Universities are unlikely to face a Blockbuster moment and become obsolete, but their ability to pivot quickly towards an AI-ready institution that embraces [digital literacy](#) will determine in large part the success and viability of each institution in the next few years.

Figures 1.6-1.7:
Digital Education Council’s
dimensions of AI readiness
(right) and literacy (below).

01 Strategic Alignment	06 Accessibility and Inclusion
02 Institutional Governance	07 Faculty and Administrative Professional Development
03 Stakeholder Engagement	08 Teaching, Learning, and Assessment Strategies
04 Operational Readiness	09 Curriculum Development and Workforce Alignment
05 AI Literacy and Ethical Use	10 Research and Innovation Leadership

AI Literacy (Digital Education Council, 2025): *The essential knowledge and skills needed to understand, interact with, and critically assess AI technologies. AI literacy includes the ability to use AI tools effectively and ethically, evaluate their output, ensure humans are at the core of AI, and adapt to the evolving AI landscape in both personal and professional settings.*



A Model for Canada: University of Toronto AI Task Force Report

Among Canadian universities, the **University of Toronto's AI Task Force Report** stands out as the most **comprehensive and forward-looking AI vision**. It integrates academic freedom, research integrity, equity, privacy, and human-centered design principles into a single framework. The report outlines governance structures, teaching innovations, research priorities, and community partnerships needed for a sustainable AI future. It emphasizes not just technical readiness but also cultural readiness, ensuring that every member of the university understands both the capabilities and the societal implications of AI.

This kind of integrated approach provides a model for other institutions, including Brock University. By studying and contextualizing U of T's approach, Brock can design a strategy that reflects its size, strengths, and mission, while still aiming for **national leadership in responsible and innovative AI adoption**.

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2. AI Tools and Training

Artificial Intelligence now encompasses a diverse and fast-evolving ecosystem of platforms, models, and applications that are transforming the way universities operate, teach, and conduct research. For Brock University, building literacy in this landscape is a critical step toward shaping an AI strategy that delivers measurable impact across academic, research, and administrative domains. The following presents a high-level overview of three major categories of [AI tools](#): **generative AI tools**, **AI tools for university administration**, and **AI tools for research and teaching**. Naturally, the proliferation of AI tools in higher education and beyond calls for training of faculty, staff and students, providing upskilling to acquire career-relevant skills.

A summary of representative tools is provided in **Table 2.1** (*Top 12 Generative AI Programs*) and **Table 2.2** (*Examples of AI Tools in Higher Education*). A full inventory with extended descriptions and use cases is provided in **Appendix 1 - Top AI Tools (for Higher Education)**.

2.1. Generative AI Tools

Generative AI refers to models and systems that can produce new content such as text, images, audio, video, or code, based on prompts or input data. These tools are increasingly used in higher education to accelerate knowledge creation, improve instructional design, and enable new forms of creative expression.

Prominent examples include **ChatGPT**, which, in its *ChatGPT Edu* form, offers campus-wide deployment with enterprise-grade security, custom GPT creation, and integration into teaching and research workflows. **Claude** (Anthropic) emphasizes safe, structured reasoning, making it suitable for collaborative learning and document analysis. **Google Gemini** integrates seamlessly into Google Workspace for tasks such as drafting lesson plans, generating visual aids, and analyzing data. **Microsoft Copilot** embeds directly into Microsoft 365 applications, enhancing productivity in Word, Excel, and PowerPoint.

In the creative domain, **DALL·E 3**, **Midjourney**, **Stable Diffusion**, and **Adobe Firefly** generate images, illustrations, and visual learning materials, while platforms such as **Runway ML** extend capabilities into video production and editing. These systems not only reduce the time required to develop teaching and marketing materials but also open new possibilities for interdisciplinary work, including the blending of visual arts, data science, and communication studies.

2.2. AI Tools for University Administration

Administrative AI tools aim to improve efficiency, responsiveness, and decision-making in institutional operations. Many tools offer direct integration with core systems such as student information systems (SIS), learning management systems (LMS), and customer relationship management (CRM) platforms.

Some tools focus on knowledge management and workflow automation. **Capacity**, for example, acts as an always-on assistant for student and staff inquiries, automating responses and streamlining processes across admissions, IT, and human resources. **Notion AI** enhances collaborative workspaces with summarization, drafting, and search capabilities, while **Guru** centralizes institutional knowledge for quick retrieval.

Other applications target meeting productivity and governance. **Otter.ai**, **Fathom**, and **Nyota** record, transcribe, and summarize meetings, identify action items, and surface trends across multiple committees. **Zoom AI Companion** combines meeting

summarization with project management integration, reducing repetitive documentation tasks and improving information flow between departments.

Gradescope applies AI-assisted grading for large-enrolment or STEM-focused courses, while **Turnitin** now includes AI-writing detection alongside plagiarism analysis. For admissions, **Kira Talent** provides structured, AI-assisted video interviewing to improve selection processes while reducing bias.

Name	Developer	Brief Description
ChatGPT	OpenAI	ChatGPT, developed by OpenAI, is a versatile large language model used for conversation, writing, translation, coding, summarization, and tutoring.
DALL·E 3	OpenAI	DALL·E 3 transforms detailed text prompts into high-resolution images with inpainting capabilities.
Stable Diffusion	Stability AI	Stable Diffusion is an open-source image model for local deployment and customization.
Midjourney	Various	Midjourney is a Discord-based generative AI platform that produces stylized, artistic images.
Jasper	Various	Jasper is a marketing-focused AI content platform with templates for copywriting, email campaigns, and social media.
Copy.ai	Various	Copy.ai specializes in sales and marketing content, offering workflows for email outreach, product descriptions, and CRM integration.
Runway ML	Various	Runway ML is a creative suite combining video, image, and audio generation.
Adobe Firefly	Various	Adobe Firefly integrates generative tools into Creative Cloud, offering text-to-image, generative fill, and content aware edits.
Claude	Anthropic	Claude is an AI model emphasizing safe, aligned conversation with large context windows.
Gemini	formerly Bard	Gemini is Google DeepMind's multimodal LLM integrated into Workspace for text, image, and code tasks.
Copilot	Microsoft	Microsoft Copilot embeds AI across Word, Excel, PowerPoint, Outlook, and Teams for drafting, data analysis, and meeting summaries.
Grok	xAI	Grok, by xAI and integrated into X, provides real-time trend analysis and conversational insights from social media data, useful for media monitoring, policy research, and sentiment analysis in academic contexts.

Table 2.1: Top 12 Generative AI programs.

University	AI Application	Description
University of Michigan	Maizey and Virtual TAs	Maizey is a no-code chatbot builder using custom datasets; virtual TAs provide 24/7 support using Google Gemini's agentic AI.
Arizona State University	CreateAI Platform	A secure AI development environment enabling community members to create, test, and scale AI-powered solutions using over twenty LLMs.
UC San Diego	TritonGPT	A suite of AI assistants including a job description helper and policy navigator, built on Meta's LLaMA 3 and hosted locally.
UC Irvine	ZotGPT Chat	Secure GPT-4-based campus assistant with voice/file input and tools like ZotDesk (helpdesk) and ScholarConnect (faculty profiles).
York University	RAG Platform	Drag-and-drop platform for building chatbots using institutional data, integrated with university systems and hosted on internal servers.
University of South Florida	AI-Powered IT Service Desk	AI triage system using ChatGPT-3.5 for classifying IT tickets, improving accuracy and efficiency.
Ithaca College	IT and Analytics AI Agent	Custom AI helpdesk assistant integrated with TeamDynamix and Slate to automate support tickets and access student records securely.
University of Tennessee, Knoxville	UT Verse	Custom GPT-4-based assistant answering campus-specific queries, integrated with UT branding and internal data systems.
University of Galway	Cara Chatbot	AI-powered assistant answering 24/7 student support queries, developed in partnership with Galvia, resolving 91% of questions autonomously.
Harvard University	AI Sandbox	Secure environment allows faculty to test multiple LLMs (GPT, Claude, PaLM) with controlled access and data privacy.
Arizona State University	Custom AI Applications (via CreateAI)	Platform supports development of AI bots like syllabus Q&A, tutor assistants, and course builders - scalable across campus.
Brock University	Alnstein Chatbot	Chatbot for Astronomy course (Dr. Barak Shoshany)

Table 2.2: Examples of usage and development of AI tools in higher education.

By reducing manual workloads, these tools allow administrative and academic staff to focus on higher-value activities such as strategic planning, student engagement, and curriculum enhancement. The collective shift is away from traditional “tasks completed” metrics toward impact-based measures, such as hours saved, quality of service delivered, and innovation enabled.

2.3. AI Tools for University Research and Teaching

In teaching and research, AI tools are reshaping how knowledge is produced, delivered, and personalized.

For research, tools like **Deep Research** (within ChatGPT) and **Perplexity AI** streamline literature reviews by synthesizing findings from credible sources, producing annotated bibliographies, and identifying research gaps. **NotebookLM** (Google) enables scholars to upload their own documents for AI-driven synthesis, question-answering, and study material generation. These tools accelerate early-stage research and grant proposal preparation while maintaining transparency through citation and source tracking.

For teaching, AI enhances student engagement and academic support. **Top Hat** integrates polling, quizzes, and discussion into lectures with real-time analytics on student comprehension. Adaptive learning platforms such as **ALEKS** personalize math and science instruction, dynamically adjusting to a learner’s demonstrated mastery.

A particularly promising development is the use of **agentic AI teaching assistants**. In 2025, the University of Michigan partnered with Google to deploy a virtual teaching assistant powered by Google Gemini. These assistants provide 24/7 course support, explain concepts, guide problem-solving, and promote critical thinking without giving away answers, while providing educators with analytics on student interactions.

Writing support platforms such as **Studiosity** combine AI analysis with “humans-in-the-loop” feedback, returning detailed formative commentary within minutes and focusing on developing critical thinking skills. These services integrate directly into LMS platforms, ensuring accessibility for all students.

2.4. Current Use of A.I Tools at Brock University

As shown in **Appendix 2 - AI Usage at Brock University**, many different AI tools are already being used at Brock University. However, a coordinated approach is currently missing, and many users are unsure about what policies and support exist concerning the use of AI at the university.

Notwithstanding, the Centre for Pedagogical Innovation (CPI) has worked with Information Technology Services (ITS) and the Office of Legal, Privacy, and Compliance to review approved GenAI tools like Contact North’s AI Teaching Assistant Pro and AI Tutor Pro (ITS Project 2142) (<https://brocku.ca/pedagogical-innovation/resources/approved-genai-tools/>).

Currently, Copilot Chat is the only GenAI interface available to Brock users that is covered by an enterprise data protection agreement (see Figures 2.1-2.2. below)

Other use examples include:

- **VMock**: Use of VMock AI-powered resume review by Career services.
- **Studiosity** (Pilot ITS Project 2158): Integrating AI-powered writing feedback into three first-year courses to enhance learning and retention (HLSC 1F90, PSYC 1F90, FMSC 1P00), catering to approx. 2,000 students. (Learning Services, Provost’s Office)

- **Covidence:** Conducting systematic and other literature reviews; rigorous and objective approach to gathering and analyzing all the evidence on a specific research question. (Library)
- **Genio, grammarly, DRAGON:** AI applications used by Student Accessibility Services to support, improve or enable audio recording of lecture material, grammar and spelling, and speech recognition for written output and device control.

2.5. AI Training at Brock University


At the moment, the university lacks a systematic approach to encouraging its faculty, staff and students to make use of AI training opportunities. The university has developed a limited number of training opportunities that can nevertheless be built upon:

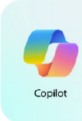


- **CPI's** [Generative AI Workshop](#) (Brock login required) that includes modules on fundamentals of AI, generative AI in teaching and learning, integrating AI into teaching practices, and assessment, accessibility & GenAI.
- **PCS's** course [PCSL 9N58 - AI Essentials](#)
- **PCS's** course [PCSL 9N57 - Exploring Large Language Models: Beyond ChatGPT](#)
- **FGSPA's** online modules [Artificial Intelligence and Academic Integrity: What Graduate Students Need to Know](#), including the topics *Questions to ask before using Gen AI; Know the AI Policy; Scenarios: Practice what you have learned; Ethics, Privacy, Copyright and Gen AI; Gen AI and Academic Writing and Research*
- **FGSPA's** online course [GRAD 101](#) (Brock login required) open to faculty, students and staff, which includes a module on AI and the option of an AI certification.

Technical Evaluation Copilot: Results

Technical Readiness (Tool only)

- ✓ Microsoft stack (Azure AD, M365 Licensing, M365 Applications, etc.)
- ✓ Identity Access Management (IAM)
- ✓ **Security/Compliance (In progress – data governance policies)**
- ✓ Vendor assessment
- ✓ Security (MFA, Audit, User Audit, SAML, etc.)
- ✓ Compliance (ISO, SOC, COBIT, SOX, etc.)
- ✓ General Data Protection Regulation (GDPR)
- ✓ **Green Light**
- Other AI tools are under evaluation



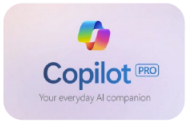


Figure 2.1: Technical evaluation of Microsoft Copilot at Brock University (courtesy of ITS).


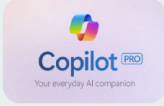
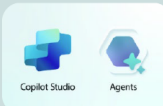
AI Enabled Processes (Use Cases)			
Tool	Processes (Administration focused)	Availability	Other Considerations
 Copilot	AI "Companion" <ul style="list-style-type: none"> Assist with writing, coding, data analysis Generation of images Utilizes external data sources + user inputs 	<ul style="list-style-type: none"> Students Faculty Staff Login to M365 	<ul style="list-style-type: none"> Free Results must be validated and maybe inaccurate
 Copilot PRO	<i>Personal AI "Assistant"</i> <ul style="list-style-type: none"> Everything Copilot does but integrated with users M365 suite (PowerPoint, Word, Teams, SharePoint, Excel, etc.) Summarize documents, emails, meetings "First drafts" reports, papers, etc. Assisted writing ("Coaching" for tone, empathy, etc.) Integrated with Teams to record meeting, capture minutes, action items, summarizes Utilizes external and "work" (@brocku.ca) data sources 	<ul style="list-style-type: none"> Available 	<ul style="list-style-type: none"> Not Free At minimum data classification & governance needs to be implemented prior to broader rollout Some training maybe required (Prompt, data set up, etc.) Results must be validated and maybe inaccurate
 Copilot Studio	Chatbot/Agent <ul style="list-style-type: none"> Create AI Agents for Chat function in teams Great for Help Desk Q&A, Registrar's Office, Client Service Automation of business rules/tasks 	<ul style="list-style-type: none"> Only Administrators can create agents 	<ul style="list-style-type: none"> Customization is required to use outside of MS Teams (publicly) Utilization based fee structure agents

Figure 2.2: Microsoft Copilot: use cases (courtesy of ITS).

2.6. Strategic Implications for Brock University

The breadth of tools outlined in Tables 2.1 and 2.2 - and detailed further in Appendix 1 - illustrates that AI in higher education is no longer experimental. It is a core enabler of efficiency, equity, and innovation.

For Brock University, adopting these tools will require:

- **Governance and Policy Alignment** – Ensuring responsible use, privacy compliance, and academic integrity. As the following chapters will demonstrate, Brock University is well on its way to addressing these issues, but several tasks remain.
- **Skills Development** – Training faculty, staff, and students in effective and ethical AI use. Beyond its undergraduate and graduate program offerings, Brock offers only limited AI training at this point, and there is a need to expand AI credentials and promote AI training as part of an institution-wide AI strategy.
- **Infrastructure Readiness** – Integrating tools into existing systems with secure, scalable architectures. ITS has begun to explore viable options for the university, but any plan going forward will require significant investments.
- **Evaluation and Iteration** – Regularly assessing impact of AI tools using both quantitative and qualitative metrics.
- **Remaining up-to-date** – Regularly reviewing the use of AI in research and teaching practices.

By strategically deploying generative, administrative, and teaching/research AI tools, Brock can improve student outcomes, enhance research capacity, and strengthen operational effectiveness, while ensuring its AI ecosystem reflects institutional values and priorities.

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 8. [The AI Agentic Index – Stanford University Overview](#), Stephen Casper et al., arXiv:2502.01635v1 [cs.SE] 3 Feb 2025.
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3. AI in Higher Education - Policy and Governance

3.1. Early Focus: Proper Use of AI in Teaching and Learning

The initial institutional focus on artificial intelligence in higher education has centered on its role in teaching, learning, and assessment. Universities have recognized that generative AI tools such as ChatGPT, Bard, and Copilot, offer opportunities to enhance student engagement, support idea generation, and facilitate personalized learning experiences. However, they also pose risks to academic integrity, authorship, and equitable access.

Policies like the University of Southern California's *Instructor Guidelines for Student Use of Generative AI* encourage faculty to integrate AI into assignments where appropriate, while ensuring students understand both its potential and limitations, including tendencies toward factual inaccuracy and bias. The emphasis has been on disclosure, critical evaluation of AI outputs, and framing AI as a complement, not a replacement, for human intellectual work.

At the same time, institutions have begun developing targeted guidance for students. The University of Illinois, for instance, issued *Generative AI Guidance for Students* to clarify expectations around responsible use, transparency, and compliance with academic integrity codes. This early wave of guidance has aimed to create a common baseline for understanding AI's role in academic work.

3.2. The Need for Policy and Governance

As AI adoption accelerates, thought leaders and governance bodies stress the urgency of formal policy frameworks. EAB's report *Early AI Governance Trends* identifies two parallel drivers: the rapid spread of generative AI in academic contexts, and the absence of comprehensive institutional governance models. Without clear policies, institutions risk inconsistent practice, reputational damage, and exposure to legal or ethical breaches.

Best-practice models, such as EAB's *How to Craft an AI Acceptable Use Policy*, recommend policies that:

- Establish principles for ethical, equitable, and secure AI use.

- Define permitted and prohibited uses by role and context.
- Address privacy, intellectual property, and data classification.
- Include processes for periodic review and updating.

The Michigan State University interim guidance on generative AI exemplifies a mature policy approach. It restricts the use of certain tools with sensitive or regulated data, sets expectations for disclosure, and promotes critical evaluation of AI outputs. Such governance ensures AI use aligns with institutional mission, complies with laws, and protects stakeholders.

3.3. Status Quo of Canada’s Universities

Across Canada, universities are moving from ad hoc guidelines to structured AI governance. The **Higher Education Strategy Associates’ AI Observatory** (<https://higheredstrategy.com/ai-observatory-home/>) tracks institutional developments nationally, showing a growing number of universities adopting AI policies for teaching, learning, research, and operations.

Examples include:

- **University of Waterloo** – *Guidance on Artificial Intelligence Use and Academic Integrity & General AI Use Guidance.*
- **Queen’s University** – *Policy on the Use of Artificial Intelligence.*
- **University of Alberta** – *Academic Integrity and AI Use.*
- **University of Regina** – *Responsible Use of Generative AI.*
- **McGill University** – Comprehensive frameworks for teaching, research, and digital services.

Institution	Policy Title
University of Waterloo	Academic Integrity & General AI Use Guidance
University of Waterloo	Guidance on Artificial Intelligence Use
Queen’s University	Policy on the Use of Artificial Intelligence
University of Alberta	Academic Integrity and AI Use
University of Regina	Responsible Use of Generative Artificial Intelligence
University of Guelph	Experiential Learning AI Usage Statement
UBC: Sauder School of Business	AI Policy for Students
McGill University	Principles of Generative AI in Teaching and Learning
McGill University	Graduate and Postdoc Research Guidelines on GenAI
McGill University	Web Services Digital Standards & AI
McMaster University	Guidelines on Generative AI in Teaching and Learning
McMaster University	Operational Guidelines on Generative AI Use for Staff
McMaster University	GenAI Guidance for Students
U15 Canada	U15 Guidance on AI in Teaching and Learning

Table 3.1: Examples of Canadian universities with AI policies.

Notably, Toronto Metropolitan University has established a *Generative AI Leadership Task Force* and four working groups that cover teaching, research, student experience, and administration, to create a university-wide framework. This model integrates governance with stakeholder engagement, ensuring buy-in across academic and administrative domains.

While progress is visible, adoption is uneven. Many institutions have yet to fully address AI in research ethics, administrative workflows, or equity implications, leaving gaps in preparedness.

Appendix 3 - Examples of Canadian Universities with AI Strategies, Policies, or Advisory Bodies and **Appendix 4 - Examples of US Universities with AI Strategies and Initiatives** contain additional information and examples concerning AI policies, governance, strategies and advisory bodies in Canada and the USA.

3.4. AI Policies and Governance Structures at Brock University

Brock University is at a pivotal moment. AI technologies are already being used informally in classrooms, research, and administrative processes. Without formal governance, this usage remains fragmented, potentially exposing the university to risks associated with academic integrity, privacy, and institutional reputation.

Status-Quo

While some guidelines and procedures exist, the university has not yet developed formal policies to address foundational AI governance. And while some of ITS' existing policies (e.g., IT Appropriate Use Policy) will apply to AI, no AI-specific policies have been developed. Current policies, procedures and guidelines concerning the use of AI include:

- CPI's [Guidance on Generative AI](#)
- CPI's [Guidance to Instructors concerning Agentic AI and Summative Assessment](#)
- CPI's [Ethical Framework for Educational Technologies](#)
- CPI's Guidance on [Designing Assessments to Mitigate the Use of AI Writing Tools](#) which is echoed in [the Course Outline Template page](#)
- CPI's [Approved GenAI Tools](#)
- **Faculty Handbook** 3.A.10.4 [Software Used to Assess Student Work](#) includes relevant sections 10.4.1. Software and 10.4.3 Artificial Intelligence (AI) Detection

Why Urgency Matters

Brock University needs to act fast and establish an institution-wide AI governance structure that all faculty and staff members are intimately aware of. It will support and address the following:

- **Alignment with Sector Standards** – Leading Canadian universities are rapidly implementing AI governance. Without comparable structures, Brock risks lagging in competitiveness and credibility.
- **Risk Mitigation** – As seen in Michigan State University's policy model, clear rules around data stewardship, intellectual property, and disclosure reduce institutional exposure to compliance failures and ethical breaches.
- **Opportunity Maximization** – With a framework similar to TMU's task force approach, Brock could coordinate AI adoption across teaching, research, and administration, leveraging AI to enhance student success and operational efficiency.
- **Cultural Readiness** – Policies alone are insufficient; governance must be paired with faculty and staff training, resource curation, and iterative policy review.

Recommended Immediate Actions for Brock

Considering the importance of governance, ITS has recently partnered with INQ Consulting to conduct a **Data and AI Governance Program Review**. While data governance will be discussed in more detail in Chapter 5 - The Importance of Data, it is advised that the institution pursue the following:

- **Developing an AI policy** that outlines Brock's strategy, values, and risk tolerance regarding AI.
- **Creating AI use guidelines** and an **AI risk/impact assessment** process to ensure responsible and transparent use of AI technologies.
- **Enhancing vendor risk management** and **formalizing AI governance structures** to oversee AI use case prioritization and risk management.
- **Developing an AI Lifecycle Process.**

By taking these steps, Brock can move from reactive adaptation to proactive leadership, positioning itself not only to manage AI's risks, but to harness its transformative potential in line with institutional values.

These measures form part of a wider AI strategy for the university, as described in Chapter 12 - An AI Strategy for Brock University. It calls for the **establishment of a university-wide AI Task Force** with representation from all faculties, the library, ITS, research administration, Legal, Compliance & Privacy Office, CPI, and student services that will oversee the implementation of the AI strategy, including the above measures.

References

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4. AI Strategies in Higher Education

The higher education sector is entering a pivotal stage in its relationship with artificial intelligence. As discussed in the previous chapter, initial reactions to the rise of generative AI in late 2022 largely concentrated on urgent concerns, chiefly academic integrity and the appropriate use of tools such as ChatGPT in teaching and learning. Universities

scrambled to establish acceptable-use policies, student guidelines, and faculty resources, reflecting a necessary but limited focus. However, higher education is now shifting beyond these early policy guardrails. Institutions are increasingly recognizing that AI will shape all areas of academic operation: teaching and learning, research, and administration. What is emerging is a new generation of **comprehensive AI strategies**, aligning institutional governance, infrastructure, and culture with the opportunities and risks of artificial intelligence. **AI will force major changes upon society and academia, and universities need to embrace AI to evolve accordingly and remain relevant.**

4.1. From Policies to Institutional Strategies

The World Council on Educational Technology (WCET) found in a 2023 survey that only 8% of U.S. institutions had implemented at least one AI-related policy, with most others still developing one. Early frameworks largely revolved around preventing plagiarism and clarifying acceptable use in coursework. While essential, these approaches are insufficient in the face of AI's wider transformative potential. Drawing on corporate strategy models, higher education leaders are beginning to treat AI not as a narrow academic integrity issue but as a driver of organizational change. Clear goals, ethical foundations, governance structures, and change-management processes are now recognized as central pillars of an institutional AI strategy.

4.2. Strategic Dimensions in Higher Education

Building on frameworks from [WCET](#) and strategic AI practice, three interdependent dimensions define comprehensive AI strategies:

- **Governance** – Senior leadership must establish structures for oversight, ethics, and decision-making. This includes data governance, evaluation of institutional AI use, equitable access, intellectual property, and integration of AI into tenure and promotion practices. Institutions often emphasize a **human-centered approach** in governance, ensuring that AI adoption reflects institutional values, protects privacy, and advances equity.
- **Operations** – Institutional effectiveness depends on embedding AI into administrative processes and infrastructure. This includes professional development for faculty and staff, investment in AI-ready digital infrastructure, and systematic evaluation of tools that enhance recruitment, advising, and student success. Strategic AI adoption frameworks highlight the importance of **change management**, ensuring that staff are upskilled and critique of AI is discussed openly.
- **Pedagogy and Research** – While academic integrity remains a central concern, pedagogy now extends to preparing students for an AI-driven workforce. Faculty must design curricula that incorporate AI skills, critical reflection, and awareness of algorithmic bias. On the research side, universities are leveraging AI for data-intensive inquiry, while simultaneously addressing concerns around ethics, bias, and sustainability.

Carnegie Mellon, for example, has integrated fairness and ethics training into its AI curriculum as a model of how pedagogy and research reinforce responsible use. Similarly, the University of Colorado at Boulder has introduced an AI Assessment Scale, a structured tool designed to help instructors evaluate the extent and manner in which AI is used in student work. This framework not only supports consistent grading practices but also encourages transparent dialogue between faculty and students about the responsible integration of AI into learning.

4.3. Example: University of Toronto

As mentioned in the previous chapter, the **University of Toronto's Presidential Task Force on Generative AI** has developed Canada's most comprehensive institutional AI strategy or vision (<https://ai.utoronto.ca/>). Rather than focusing narrowly on classroom use, Toronto's framework spans **teaching and learning, research, administration, and community impact**. It emphasizes a *human-centered approach*, framing AI as a tool to augment rather than replace human expertise. Key recommendations include:

- Building AI literacy across the institution.
- Supporting faculty and student experimentation with AI tools.
- Establishing governance mechanisms for ethical use, privacy, and data security.
- Leveraging AI to enhance equity of access, not deepen divides.
- Positioning Toronto as a leader in AI research with global partnerships.

Toronto's approach demonstrates a forward-looking shift: from reactive policy to strategic integration of AI into the university's long-term mission.

Appendices 3 and 4 contain further examples of Canadian and US institutions with AI strategies. Concerning universities in the US, Arizona State University (ASU) has been the leader in incorporating AI into all aspects of its operations, embracing a partnership with ChatGPT EDU in the process (<https://ai.asu.edu/>) and unlocking the creative capacity of its employees through an open call for projects during the early days of AI adoption. ASU has dedicated significant resources to drive its vision.

4.4. Critical Aspects for Implementing an AI Strategy

While the principles of governance, operations, and pedagogy establish the foundation of an AI strategy, successful implementation requires attention to several critical dimensions.

Mission-driven, High-impact Focus

An AI strategy must be anchored in the mission and strategic plan of the university. Rather than spreading resources too thinly, **institutions should begin with a small number of high-impact areas** where AI can deliver visible improvements quickly. For example, enhancing student advising, development and alumni relations, and course preparation may yield measurable outcomes in student experience and operational efficiency. Early successes build momentum and trust, providing proof-of-concept for wider adoption.

Data Collection and Curation

AI is only as effective as the data it processes. Universities must establish robust systems for curating, cleaning, and securing their data. This includes creating institution-wide standards for data quality, accessibility, and interoperability, while ensuring compliance with privacy legislation. High-quality data assets will not only improve AI outputs but also enable cross-departmental collaboration and more sophisticated institutional analytics.

Security, Privacy, and Risk Management

Institutions handle highly sensitive information, including student records, research data, and financial systems. Any AI deployment must therefore incorporate strong cybersecurity safeguards, privacy protections, and transparent risk assessments. This involves vendor vetting, compliance with regulations such as General Data Protection Regulation (GDPR) or local privacy acts, and regular reviews. Without robust protection, the adoption of AI risks undermining trust and exposing universities to reputational and financial harm.

Trust and Buy-in

Effective AI adoption depends on the confidence of employees and students. Change-management frameworks underscore the need for transparent communication, training, and active involvement of stakeholders. Faculty and staff must understand not only *how* AI will affect their work, but *why* it is being introduced and *what benefits* it can bring. Students, likewise, should be engaged in conversations about how AI will shape their learning experiences and career readiness. These factors, combined with better transparency of AI algorithms, can build trust that transforms resistance into ownership.

Ethical Use

Universities are custodians of values as well as knowledge. Ethical use of AI must therefore underpin all strategies. This includes addressing algorithmic bias, ensuring equitable access, balancing automation with human judgment, and even concerns about the environmental footprint of AI. A commitment to ethics strengthens institutional legitimacy and prepares students to engage responsibly with AI in their professional lives.

Clear Procurement Processes and ROI

As AI tools proliferate, institutions must establish transparent processes for acquiring, evaluating, and renewing software and licenses. Decisions should be guided by cost-benefit analysis, vendor accountability, and return on investment (ROI). Standardized procurement practices reduce duplication, contain costs, and ensure that each acquisition aligns with the institution's strategic priorities. Free, local AI tools may soon provide cost effective alternatives to commercial, cloud-based platforms.

Together, these critical aspects create an enabling environment for an AI strategy to succeed. They move AI from being an experimental add-on to becoming a structured, mission-driven capability that strengthens the academic enterprise.

4.5. Challenges and Risks

Strategic integration requires grappling with AI's risks. Concerns around bias, ecological footprint, and data security are not abstract — they are well-documented across industries and directly relevant to universities. If unaddressed, such risks could undermine equity, erode trust, or expose institutions to liability. As the WCET framework notes, grounding all AI strategies in ethics and responsible use is essential to prevent inequities and ensure equitable access.

4.6. Towards Comprehensive AI Strategies

The trajectory is clear: higher education is moving from fragmented, classroom-level policies to whole-of-institution strategies. Comprehensive AI strategies in higher education should:

- **Define clear goals** that align AI initiatives with institutional missions.
- **Start small, think big** by targeting high-impact areas first.
- **Build capacity** through training, professional development, and infrastructure investment. Innovation grants (see Chapter 12) can help kickstart capacity building.
- **Foster ethical governance** to address bias, privacy, security, and intellectual property.
- **Embed AI across all operations** of teaching, research, and administration.
- **Engage in change management**, helping faculty, staff, and students adapt with confidence.
- **Evaluate and iterate** through feedback loops and transparent reporting.

The institutions that succeed will not be those that simply regulate student use of ChatGPT, but those that embrace AI as a strategic enabler of their academic mission. In this sense, universities are at an inflection point: those that invest now in comprehensive AI strategies will be better positioned to lead in research, prepare graduates for AI-infused careers, and operate more effectively in an increasingly data-driven world.

The following seven chapters will elaborate further on the above-mentioned critical aspects for implementing an AI strategy, setting the parameters for an AI strategy for Brock University.

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5. The Importance of Data

5.1. The Importance of Data for AI and AI Tools

Artificial intelligence cannot function without data. Every algorithm, prediction, or recommendation produced by AI reflects patterns found in the data that trained it. High-quality, well-governed data determines whether AI enhances decision-making or perpetuates inefficiencies and bias. As EAB emphasizes, “*AI has the potential to be transformative for higher education — but only if an institution’s data is organized, governed, and accessible*”.

The importance of good data is underscored by the adage “*garbage in, garbage out.*” If enrollment numbers, course records, or financial data are inaccurate or inconsistent, AI tools will generate flawed predictions that misinform leaders and erode trust. Conversely, reliable data allows universities to build predictive models for student retention, automate reporting, and personalize academic support.

From a competitive standpoint, MIT reports that data-driven businesses can achieve EBITDA (*earnings before interest, taxes, depreciation, and amortization*) increases of up to 25% compared to peers. This shows that leveraging data through AI is not just an operational necessity but also a driver of institutional growth and resilience. For universities, becoming data-driven means aligning data initiatives with academic missions, using AI not as a technology add-on, but as a catalyst to support student success, research impact, and financial sustainability.

5.2. Data Collection, Curation, and Safe Handling

Data Collection

Data collection in higher education spans across learning management systems (LMS), student information systems (SIS), research outputs, financial operations, alumni relations, and more. As MIT stresses, real-time data collection is increasingly vital. For instance, just as banks need live data for fraud detection, universities need timely data on student engagement or attendance to intervene proactively.

Yet collection is not merely about volume. Institutions must ensure that data is subject to *free, informed and ongoing consent, ethical, and relevant*. Clear protocols around privacy and student rights help ensure compliance with regulations and protect institutional integrity.

Data Curation

Curation transforms raw data into usable, trustworthy assets. Data must be accurate, consistent, and integrated across campus systems. Without consistency — say, one system using “Fall 2024” while another uses “Autumn 2024” — AI systems may misinterpret records, creating reporting errors.

Curation also involves documentation, metadata, and shared definitions. For example, Gateway Technical College used AI-powered tools to create over 3,000 accurate data definitions, resolving long-standing ambiguity in their data warehouse. These efforts reduce redundancy, speed up reporting, and create a “single source of truth” across departments.

Safe Handling

Safe handling is the bedrock of data governance. This includes:

- **Security:** protecting sensitive student, staff, and research data from cyberattacks.
- **Privacy:** ensuring compliance with laws such as Canada’s *Personal Information Protection and Electronic Documents Act (PIPEDA)* and provincial legislation.
- **Accountability:** assigning clear roles for data ownership and stewardship.
- **Transparency:** making data use visible so stakeholders understand how and why it is applied.

Governance can be “federated”: central IT sets protocols, but units are empowered to manage local data governance tasks. This balance fosters agility while maintaining oversight.

Concerning data analytics, data-driven decisions should be fair, non-discriminatory, and respect individual rights, going beyond mere legal compliance to uphold trust and responsible practices.

5.3. How Universities Can Ensure They Collect the Data Required for AI

For universities, building an AI-ready data ecosystem requires both cultural and technical shifts. Four pillars are key:

- **Align Data with Strategic Goals**
Universities must first identify the areas where AI can provide the greatest impact: student success, research funding, teaching, or operational efficiency. Data initiatives must be tied directly to institutional priorities. For example, if student retention is a priority, the institution must ensure it consistently collects engagement, advising, and performance data across platforms.

- **Break Down Silos**
Many institutions operate with fragmented systems. SIS, LMS, Customer Relationship Management (CRM), and research databases rarely “speak” to each other. This creates duplication, inefficiency, and lost insights. Case studies demonstrate how integrating these silos through AI-powered platforms such as Edify allowed universities like Montana and Utah to streamline reporting and empower staff with deeper insights.
- **Democratize Access and Build a Data Culture**
Data should not be the preserve of IT departments. Faculty, advisors, administrators, and even students need appropriate access. MIT highlights the importance of *data democratization*, where users take ownership of insight generation. Universities can follow suit by training staff on data literacy, creating cross-departmental governance councils, and fostering a culture where data is viewed as a shared institutional asset.
- **Invest in Infrastructure and Automation**
AI-driven workflows can automate repetitive reporting, compliance documentation, and even early-warning systems for at-risk students. As case studies show, these efficiencies free up institutional research teams to focus on strategic analysis rather than ad hoc requests. Building scalable cloud-based data warehouses ensures the university can handle future growth and innovation.

For **Brock University**, **INQ Consulting** identified the following **immediate actions**:

- **Establishing clear data structures and an operating model to define, organize, and relate data across the university.**
- **Developing and formalizing supporting data governance policies, standards, and procedures.**
- **Implementing tools and technology to support data governance activities, such as metadata repositories and data quality monitoring.**

The INQ report emphasizes that effective data governance and data management practices are fundamental to the safe, ethical, and appropriate adoption of AI. The report should be used as a major anchor point of an institutional AI strategy (see Chapter 12).

Summary

Data is not just fuel for AI, it is the foundation of trust, strategy, and transformation in higher education. Poor data undermines AI’s promise, while strong, curated, and secure data empowers institutions to make informed decisions, personalize education, and remain competitive in an AI-driven world.

The lessons from both industry and higher education are clear: institutions must align data initiatives with strategic priorities, dismantle silos, democratize access, and invest in governance and infrastructure. In doing so, universities like Brock can ensure they not only adopt AI tools, but use them responsibly, ethically, and effectively to advance their mission.

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6. Security, Privacy, and Risk Management

With the adoption of Artificial Intelligence in the operations of higher education, from teaching and research to student services and administration, comes a responsibility to anticipate and mitigate associated risks. Universities must safeguard their systems, data, and reputations against emerging threats. This chapter examines three critical domains, i.e., **security**, **privacy**, and **risk management**, highlighting the challenges and strategies most relevant for higher education.

6.1. Security Aspects

Universities are attractive targets for cyberattacks, not only because of the sensitive personal data they hold but also due to their research outputs and intellectual property. AI introduces new layers of vulnerability:

- **System Manipulation and Data Poisoning**
Attackers can subtly alter input data to deceive AI models, leading to false predictions or compromised performance. Examples include “data poisoning,” where corrupted training data skews results, or “backdoor attacks,” where hidden triggers cause malicious outputs.
- **Transfer Learning Exploits**
Pre-trained AI models, widely used in academia, can leak sensitive information when fine-tuned. Studies have shown that attackers can extract personal data embedded in these models.
- **Cybersecurity Infrastructure**
AI tools themselves must be hardened through strong access controls, encryption, and monitoring. The *Zoom Security White Paper* illustrates how trusted platforms integrate end-to-end encryption, multi-factor authentication, and role-based access to protect data during digital collaboration. Universities must adopt similar enterprise-level protections when deploying AI. Cybersecurity risks also include external threats and attacks through social engineering, phishing, and impersonation scams using AI.
- **Risk Management Practices**
A 10-step framework has been proposed for AI cybersecurity by [C1](#): building institutional risk programs, hardening policies, performing penetration testing, vendor assessments, and adopting zero-trust environments. For universities, this means incorporating AI threats into broader IT risk assessments, incident response drills, and vendor procurement processes.

6.2. Privacy Aspects

AI's power lies in its ability to analyze vast datasets, but this often involves sensitive personal information about students, faculty, and staff:

- **Data Collection and Surveillance**
AI-enhanced systems can inadvertently amplify surveillance. Tools that track attendance, monitor student emotions, or analyze behavior may cross ethical boundaries if not properly regulated. The risks include reinforcing systemic biases or violating rights to autonomy.
- **Data Breaches and Repurposing**
AI models can unintentionally expose private data through “membership inference attacks” or improper model training. Privacy risks extend beyond immediate breaches; data collected for one purpose may be repurposed without consent, raising compliance concerns with laws like General Data Protection Regulation (GDPR) or Canada’s Personal Information Protection and Electronic Documents Act (PIPEDA).
- **Institutional Responsibility**
Universities must build safeguards into AI deployments: anonymization, differential privacy, clear consent policies, and regular reviews. The *Zoom Security Guide* demonstrates good practice, committing not to sell personal data and ensuring encryption of stored communications. Higher education institutions should similarly adopt transparent policies to foster trust.

6.3. Other Risks of AI in Higher Education

Beyond security and privacy, universities must contend with a broader spectrum of risks associated with AI:

- **Bias and Inequality**
AI systems can perpetuate inequities in admissions, grading, and hiring. Algorithms used in healthcare and recruitment have displayed racial and gender bias. In higher education, biased AI risks reinforcing structural inequalities unless fairness reviews are embedded into governance. Costs of AI tools can be prohibitive to many individuals, generating access inequity.
- **Intellectual Property**
New discoveries and knowledge generation facilitated by using AI may lead to disputes over intellectual property when it includes both an AI tool and externally-sourced data.
- **Job Displacement**
Automation threatens administrative roles. There are AI-induced job losses, and universities must respond with reskilling initiatives. Unionized environments pose extra challenges in this regard, requiring particular attention and solutions.
- **Academic Integrity**
Generative AI challenges traditional assessment practices. Academic integrity is undermined by plagiarism facilitated by generative tools. Universities must explore reimagined evaluation methods.
- **Misinformation and Deepfakes**
AI-generated content such as deepfakes, synthetic essays, or manipulated media, poses risks to credibility in both teaching and research. The university must foster awareness and understanding of AI risks so that students and staff naturally [evaluate digital content critically](#) to prevent academic dishonesty and reputational harm.

- **Environmental and Resource Risks**
AI requires significant computational power, leading to high carbon emissions and e-waste from hardware turnover. Universities should commit to sustainable AI by investing in green computing practices and partnering with vendors who demonstrate a similar commitment.
- **Reputational and Legal Risks**
Misuse of AI or misinformation provided by AI tools, whether through biased admissions algorithms, chatbots, mishandled data, or unethical surveillance, can lead to legal action, regulatory penalties, and erosion of public trust. Institutions that fail to demonstrate responsible AI stewardship risk damaging their academic and societal standing.

Summary

Security, privacy, and risk management are foundational to the responsible integration of AI in higher education. Universities must adopt a layered defense strategy: robust cybersecurity infrastructure, transparent privacy practices, fairness reviews, sustainability commitments, and institution-wide risk management frameworks. As AI continues to reshape teaching, research, and administration, proactive governance will determine whether institutions harness its potential responsibly or fall prey to its dangers. For Brock University and peer institutions, this means embedding AI risk management directly into strategic planning, ensuring that innovation is balanced with security, trust, and accountability.

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7. Trusting AI

Artificial Intelligence offers higher education institutions immense potential, but its adoption depends fundamentally on **trust**. Universities cannot realize the benefits of AI tools if employees and students perceive them as opaque, biased, or threatening. Trust, therefore, must be intentionally cultivated across all levels of the university community. However, persistent issues with fake citations, AI hallucinations and other, incorrect AI-generated content pose a challenge to creating the required level of trust.

7.1. The Importance of Trust Among Employees and Students in AI Implementation

For employees, trust is the prerequisite for embracing AI. Implementation efforts often stall not because of technical challenges, but because staff do not trust how AI systems will affect their work. Employees may resist when they fear job loss, bias in decision-making, or misuse of their data. Employees must also feel confident that AI aligns with ethical and professional standards, otherwise adoption becomes fragmented or adversarial.

Gaining “buy-in” requires clear communication about AI’s role as an enabler, not a replacer. Leaders must emphasize that AI can automate repetitive tasks, improve efficiency, and reduce error, thereby allowing staff to focus on more meaningful and strategic work. This calls for upskilling: employees who receive training are more likely to trust AI outputs because they understand both capabilities and limitations. Without this trust, employees may turn to “shadow AI” — unsanctioned, risky uses of generative AI — further undermining institutional governance.

Within universities, trust extends beyond employees to students. Academic environments are built on credibility, fairness, and transparency. These values must be carried into AI adoption. If students suspect that AI-driven grading, advising, or admissions tools are biased, opaque, or intrusive, trust in the university itself can erode. Outside academia, algorithmic bias in recruitment and healthcare systems can lead to unequal treatment that may disproportionately harm marginalized groups. Translated to academia, similar inequities in admissions, financial aid, or academic advising could jeopardize the institution’s reputation and legitimacy.

Furthermore, universities hold a dual responsibility: to prepare students for an AI-driven workforce and to safeguard them from harms posed by AI misuse. Trust in AI grows when learners perceive institutions as equipping them with the skills and critical literacies needed to thrive. If universities position AI only as a surveillance or monitoring tool, they risk alienating students rather than empowering them.

Trust also underpins academic integrity. Students must trust that AI policies are clear, equitable, and consistently applied, while faculty must trust that students are using AI responsibly. Institutions need to balance innovation with integrity by embedding ethics, fairness, and transparency into their academic AI policies.

7.2. Building and Maintaining Trust in AI

Trust cannot be assumed; it must be earned and sustained. Several strategies support the building of trust:

- **Transparency and Explainability**
Users need to understand how AI systems reach conclusions. Universities must demand explainable AI tools that allow staff and students to interrogate results. Clear communication concerning why a recommendation was made and what data were used, builds credibility. In this context, free, local AI tools may provide viable alternatives to cloud-based platforms.
- **Ethical and Equitable Design**
Bias and inequity erode trust quickly. Universities should implement AI fairness reviews, adopt open frameworks like IBM’s AI Fairness 360, and ensure that AI governance includes diverse voices. Trust grows when communities see that fairness and inclusivity are not afterthoughts, but design priorities.
- **Employee and Student Education**
Training is central to building trust. Offering professional development for staff and digital literacy training for students ensures that both groups can use AI critically and confidently. Upskilling is also linked to empowerment: employees who understand AI feel less threatened by it.
- **Robust Data Stewardship**
Trust in AI depends on trust in data. Strong data governance is critical, protecting privacy, maintaining accuracy, and ensuring data are used ethically. Universities must adopt strict data protection standards and communicate these openly to staff and students.

- **Human Oversight and Accountability**
Maintaining “human-in-the-loop” systems serve to counteract AI bias. Employees and students must know that AI will never replace human judgment entirely in high-stakes decisions like admissions, grading, or promotions. Accountability frameworks (*Who is responsible when AI gets it wrong?*) are critical.
- **Culture of Dialogue and Participation**
Building trust requires listening which can be supported by participatory governance: involving employees, faculty, and students in shaping AI policies, selecting tools, and defining ethical guardrails. Universities must position AI not as a top-down imposition, but as a collaborative transformation.

The University of Kansas **Center for Innovation, Design & Digital Learning (CIDDL)**, working in collaboration with the U.S. Department of Education, has released a comprehensive **framework for the responsible implementation of artificial intelligence** that is applicable to all levels of education. The framework provides educational institutions with structured guidance for integrating AI into daily operations and curriculum in ways that support learning while minimizing risks. It sets out four core recommendations.

First, institutions are urged to **build a stable, human-centered foundation** that prioritizes educator judgment and student relationships, while ensuring transparency and compliance with data protection laws. AI should never replace human decision-making in matters that impact student progress, accommodations, or disciplinary actions.

Second, the framework calls for **strategic planning through the creation of AI task forces** that include educators, administrators, students, legal advisors, and specialists. These groups should conduct reviews and risk analyses before adopting tools, focusing on those that align with long-term educational goals.

Third, institutions are encouraged to **leverage AI to expand accessibility**, offering multiple means of content delivery, varied options for student expression, and customizable supports to enhance focus and executive function. At the same time, institutions must guard against algorithmic misjudgment by prohibiting AI from making final eligibility or placement decisions.

Finally, the framework **emphasizes ongoing evaluation, professional development, and community engagement**. By building institutional readiness and preparing educators as informed AI users, the guidance positions institutions to adapt responsibly as AI technologies evolve.

Summary

Trust in AI is not a peripheral concern. Instead, it is the central condition for successful adoption. For employees, trust makes the difference between enthusiastic engagement and covert resistance. For students, trust determines whether AI strengthens or undermines their confidence in academic fairness and institutional credibility. To build and maintain trust, universities must prioritize transparency, ethics, education, data stewardship, accountability, and dialogue. At Brock University, this means embedding trust into every stage of AI strategy: from governance structures to staff training, from student policies to ethical technology procurement. Only through this deliberate focus can AI become not only a tool for efficiency and innovation, but also a trusted partner in the university’s mission.

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-

8. Ethics in AI

Artificial intelligence has long been accompanied by ethical debates. Early concerns appeared in the mid-20th century when pioneers like Alan Turing speculated on machine intelligence and control, while Norbert Wiener raised alarms about automation's social impacts. During the 1970s–1990s, ethicists began questioning privacy, employment, and surveillance as computing spread. In the 21st century, with machine learning, big data, and generative AI, the urgency has intensified.

Contemporary AI ethics focuses on principles of **fairness, accountability, transparency, and explainability**. Historical lessons such as biased algorithms in healthcare and policing underscore the persistence of systemic bias when datasets reflect structural inequalities. The White House's *2022 Blueprint for an AI Bill of Rights* and the European Commission's *2024 AI Act* both demonstrate how governments attempt to formalize protection for citizens.

The ethical questions universities and businesses face today, ranging from environmental sustainability to algorithmic discrimination, are not entirely new, but the **scale and impact of AI adoption** make them more urgent. Guiding questions emphasize issues such as why AI is selected, how bias is mitigated, how privacy is protected, and how transparency is ensured.

8.1. Ethics in AI in the Business World

Businesses face both opportunity and responsibility in deploying AI. On the one hand, companies integrate AI to optimize logistics, personalize customer experience, and increase productivity. On the other, ethical risks include:

- **Bias in hiring and HR systems**, e.g., Amazon's abandoned recruitment tool that penalized women.
- **Privacy breaches and security vulnerabilities**, such as transfer learning attacks extracting personal data.
- **Environmental impact**, where training large models consumes vast energy resources.
- **Employment disruption**, as automation alters job structures, creating anxiety about displacement.

Leading companies are responding with **ethics frameworks**. Microsoft's AI Principles highlight fairness, transparency, accountability, and inclusiveness. IBM's *AI Fairness 360* toolkit supports developers in testing for bias. Salesforce has created an AI Ethics Advisory Board to consult with external experts. Google and Intel provide staff with AI ethics training, while OpenAI emphasizes transparency.

For businesses, ethics in AI is no longer just reputational; it is a **risk management necessity**. Failures can lead to litigation, regulatory backlash, and erosion of public trust.

8.2. Ethics in AI in Higher Education

Concerning AI, universities encounter “[*philosophical, ethical and pedagogical dilemmas*](#)”. Ethical concerns arise at three intersecting levels: **teaching, research, and institutional use**.

- **Teaching**
Universities are incorporating AI ethics into curricula to ensure graduates can navigate the moral landscape of AI. Carnegie Mellon integrates ethics and fairness directly into its AI degree program. The U15 group of Canadian universities stresses the importance of teaching responsible AI use, including critical literacy and awareness of bias.
- **Research**
Ethical research involves examining algorithmic bias, developing explainable AI, and evaluating social impacts. Many institutions now require **ethics board approval** for AI research involving human data, similar to biomedical standards. Questions of dataset provenance, consent, and security dominate this conversation.
- **Institutional Use of AI Tools**
Universities themselves adopt AI in admissions, advising, grading, and HR. Ethical challenges include ensuring transparency in decision-making, preventing discriminatory outcomes, and safeguarding student data. This highlights the need for **governance structures, oversight mechanisms, and training for staff and students**.

Ethics in higher education also involves preparing the next generation of leaders to think critically about **what AI should do - not just what it can do**.

8.3. How Universities Address Ethics in AI – Three Examples

- **University of Toronto**
The University of Toronto has one of the most comprehensive AI visions in Canada. Its *AI Task Force* report emphasizes a **human-centered approach**, integrating ethics into pedagogy, research, and administration. Students engage in ethics modules across disciplines, while the institution develops policies on responsible tool usage and governance.
- **Carnegie Mellon University**
CMU pioneered an undergraduate AI program embedding **ethics, cognitive psychology, and social implications** into technical training. This ensures graduates are not only technically skilled but also ethically informed. Research groups at CMU also explore fairness, accountability, and transparency, making the university a global leader in responsible AI education.
- **University of Edinburgh**
The University of Edinburgh has established the **Centre for Technomoral Futures**, which integrates philosophy, data science, and public policy. It emphasizes teaching students “*technomoral virtues*” such as honesty, empathy, and responsibility when working with AI systems. The university also leads research on AI governance and collaborates with the UK government on regulatory frameworks.

Summary

The ethics of AI is no longer an abstract debate but a pressing framework for action. Historically grounded in concerns about automation, today's challenges include bias, privacy, environmental impact, and trust. Businesses increasingly implement ethics frameworks to protect both stakeholders and reputations. Higher education plays a dual role: shaping ethical research and teaching, while ensuring its own adoption of AI tools respects fairness, transparency, and accountability.

The examples of the universities of Toronto, Carnegie Mellon, and Edinburgh demonstrate that universities can lead by embedding ethics across teaching, research, and institutional practice. For Brock University, the lesson is clear: **any AI framework must be rooted in ethics and trust** if it is to succeed in supporting its mission.

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9. Return on Investment (ROI) of AI

Return on Investment (ROI) is a core business metric used to evaluate the efficiency and profitability of an investment. Traditionally, ROI is calculated by dividing the net benefit (or gain) from an investment by its cost. In simple terms, it answers the question: *Did this investment generate more value than it consumed?* ROI is not only a financial measure but also a strategic tool that helps organizations allocate resources effectively.

When applied to artificial intelligence, ROI extends beyond immediate financial returns. AI often delivers indirect and less easily measurable benefits, such as improved decision-making, enhanced employee satisfaction, better risk management, and freed-up time for higher-value tasks. Measuring AI's return requires a structured process: defining goals, selecting AI solutions, ensuring data readiness, implementing iteratively, and measuring success.

9.1. ROI of AI in the Business World

AI adoption in business has grown rapidly, with global AI markets expected to exceed \$1.5 trillion by 2030. Yet, ROI remains uneven. Studies show that while most organizations are experimenting with AI, only about 10–35% report achieving significant measurable returns. **The key determinant is strategic implementation, including well-chosen use cases, robust data infrastructure, and employee readiness.**

Examples of Business ROI from AI

- **Retail (AI Chatbots):** Retail companies that deploy an AI-powered chatbot reduce customer response times by 40% and achieve significant annual savings.
- **Manufacturing (Predictive Maintenance):** Many manufacturing firms have implemented AI predictive maintenance, cutting downtime by 30%.
- **Banking (Fraud Detection):** JPMorgan Chase employed AI to reduce false fraud alerts by 50%, leading to faster transactions, improved customer trust, and millions saved in operational costs.
- **Entertainment (Content Recommendation):** Netflix reportedly increases returns by over \$1 billion annually using AI recommendation algorithms that improve user retention and engagement.
- **Logistics (Route Optimization):** UPS's AI-driven Orion system has reduced fuel consumption by 10–15% and delivery times by 25%, translating into substantial cost savings.

These cases show that AI delivers both *hard-dollar returns* (direct savings, revenue growth) and *soft-dollar returns* (customer loyalty, improved decision-making, brand value).

9.2. ROI of AI in Higher Education

While businesses often measure AI ROI in financial terms, universities must balance financial considerations with broader academic and societal impacts. Higher education institutions can realize ROI from AI in two key ways:

Business and Financial Returns

Universities are large organizations with significant operational costs in administration, enrollment, facilities, and student services. AI can reduce costs and increase revenue through:

- **Enrollment Management:** AI-powered predictive analytics improve student recruitment by identifying high-potential applicants, reducing marketing costs while increasing yield rates.
- **Operational Efficiency:** Chatbots handling admissions and financial aid queries free staff for complex cases, cutting service costs while improving student satisfaction. In fact, many students already prefer to interact with chatbots vs. humans, at least in the initial phase of the query. Considering the rapid development of AI and AI tools, it is expected that chatbots will become widely available and easy to implement, not only in higher education.
- **Resource Allocation:** AI-driven scheduling and predictive maintenance of facilities reduce inefficiencies and save on infrastructure spending.

For example, Arizona State University uses AI-driven advising systems that improve student retention, where each retained student represents significant tuition revenue. Similarly, Georgia State University's AI chatbot for enrollment inquiries increased student engagement and reduced summer melt, translating into millions in preserved tuition revenue.

Less Measurable but High-Value Returns

ROI in higher education is not confined to dollars saved. AI frees up time and enhances the *quality* of work:

- **Faculty Time for Research & Mentorship:** By automating scheduling, course preparation, and routine correspondence, AI allows professors to dedicate more

time to mentoring students and advancing research agendas. Automated grading can carve out additional time, but it remains a controversial topic from a pedagogical, employment and reputational perspective.

- **Creative and Strategic Capacity:** Administrative staff relieved of repetitive data-entry tasks can focus on strategic planning and student success initiatives.
- **Student Success:** AI-driven learning analytics help identify at-risk students early, allowing proactive interventions that improve graduation rates which is a core measure of institutional success.
- **Reputation and Competitiveness:** Institutions demonstrating innovative AI adoption enhance their standing among peers, prospective students, and donors.

These softer returns, namely, employee satisfaction, student engagement, and time for innovation, are as critical as financial savings for universities.

Summary

AI's ROI must be understood broadly and not only in terms of direct financial returns but also in terms of efficiency, innovation, and human potential. Businesses illustrate clear examples of measurable ROI through cost savings, productivity gains, and revenue growth. In higher education, financial returns matter, but the most transformative impacts come from freeing up intellectual capacity, enhancing student engagement, and supporting institutional competitiveness.

For Brock University, framing AI investments in terms of both *hard-dollar returns* (cost savings, improved retention) and *soft-dollar returns* (faculty creativity, student mentoring, institutional reputation) will be essential. ROI from AI should be measured with a balanced scorecard approach: one that values financial prudence alongside the mission-driven outcomes central to universities.

References

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3. [How to maximize ROI on AI in 2025](#), I. Belcic and C. Stryker, IBM, 2025.
4. [The State of AI in 2023: Generative AI's Breakout Year](#), McKinsey, 2023.

10. Procurement of AI Tools and Software

For Brock University, acquiring AI tools is not just a purchasing decision but also a governance decision that touches strategy, risk, policy, privacy, pedagogy, and finances. Below is a summary of 1) core procurement concerns, 2) why return on investment (ROI) matters, 3) mitigation strategies, and 4) the policies and procedures that make AI procurements safe, effective, and aligned with institutional goals.

10.1. Main Concerns around Procurement (Licenses and More)

Licensing and Lock-in

Many AI products bundle features, storage, and model access under subscription or usage-based terms that can hide total cost of ownership (TCO) and complicate exit strategies. Due diligence should surface data portability, model/version change policies,

audit/review rights, and pricing escalators. EDUCAUSE's recent procurement analyses in higher education highlight these emerging frictions as institutions buy Gen AI at speed.

Data Rights, Privacy, and Model Training on your Data

Contracts must clarify ownership of inputs/outputs, whether institutional data may be used to train vendor models, cross-border data flows, and vendor breach/incident responsibilities. Risk frameworks (e.g., NIST AI RMF) recommend structured identification and treatment of these risks prior to deployment.

Safety, Bias, and Compliance

Universities increasingly procure AI that could be “high-risk” under university, provincial or federal legislation.

The Role of AI dashboards in Individual Tools

Another concern in acquisition is the usability of the **dashboard within the tool itself**. Dashboards are the main interface where users interact with AI systems: configuring features, monitoring results, and interpreting analytics. A poor dashboard can lead to low adoption, while an intuitive one can boost productivity and engagement. Vendor assessments should therefore ask how well the dashboard supports visualization, accessibility, and interoperability across campus systems.

10.2. The Importance of Return on Investment (ROI)

Financial ROI

AI can reduce administrative costs (automation, routing, reconciliation), improve retention/advancement targeting, and compress time-to-insight in research services. Sector reporting shows ROI is strongest when purchases are tied to explicit use cases and measured with key performance indicators (KPIs) from the outset (e.g., cycle time, case throughput, retention lift).

Non-financial ROI

Equally important are “soft” returns: freeing faculty time for teaching, mentoring, and research; improved service quality; and staff satisfaction from removing repetitive work. These are all gains which are repeatedly emphasized in higher-education policy and practice discussions.

Dashboards for ROI Tracking

Dashboards embedded in individual AI tools often provide built-in analytics: usage logs, performance metrics, or visualizations of outcomes. These features are essential in demonstrating whether the tool delivers measurable value. For example, an advising chatbot's dashboard may show average query resolution time and student satisfaction ratings which are key indicators of both efficiency and impact.

10.3. Strategies to Mitigate the above Concerns

Adopt Recognized Procurement Playbooks

Use public-sector AI procurement guides to structure market engagement, risk scoping, and tender language. The World Economic Forum's *AI Procurement in a Box* (guide + workbook) provides decision criteria, risk prompts, and transparency requirements one can adapt for universities.

Embed Risk Frameworks into Request for Proposals (RFPs)

Require vendor alignment to **NIST AI RMF 1.0** (govern, map, measure, manage) and associated playbook artifacts (risk registers, evaluations, continuous monitoring plans). These references convert abstract “trust” into verifiable deliverables during selection and contract management.

Ask for Management-system Evidence

ISO/IEC 42001:2023 (the AI management-system standard) allows one to ask vendors for certification or a mapped statement of conformity, raising confidence in governance, documentation, and continuous improvement practices around their AI lifecycle.

Use Model Contractual Clauses where Available

The EU’s Community of Practice has issued updated **Model Contractual Clauses for AI (MCC-AI)**, including versions for high-risk and non-high-risk systems. Even for non-EU buyers, these clauses are a useful starting point for performance, transparency, and oversight terms.

Evaluate Tool Dashboards in Pilots

Pilots should specifically test the dashboards of AI tools for usability, clarity, accessibility, and integration. If users cannot easily interpret results or configure features via the dashboard, adoption will lag, regardless of the model’s sophistication.

Develop Assessment Spreadsheets for AI Dashboard Vendors and Big Data & ML Vendors

As part of the assessment of a product’s suitability, asking potential vendors critical questions will help identify the right product before procurement and mitigate risks down the road. Tables 10.1 and 10.2 provide examples for such assessment spreadsheets.

10.4. Policy Sets Guardrails; Procedures Operationalize Them

A university AI procurement policy should require: (1) alignment with the institutional strategy and a named use case; (2) privacy and data-protection review; (3) accessibility review; (4) risk assessment (e.g., NIST AI RMF/AIA); (5) secure contracting; (6) pilot-then-scale change management; and (7) KPI tracking for ROI and equity impacts.

Dashboard Usability as a Policy Requirement

Policies should explicitly state that any acquired AI tool must include a user-friendly dashboard with accessible features and transparent analytics. This ensures that both technical and non-technical staff can confidently interact with the system.

Continuous Oversight

Procedures should define testing prior to go-live, model change controls, drift/bias monitoring, incident response, and periodic third-party assurance.

Regulatory Readiness

Clear internal processes and procedures make it easier to comply with staggered obligations under future provincial/federal rules and to demand vendor conformance during procurement.

Points to Consider	#	Questions to Ask Vendor
1. Features and Functionality	1	Can you provide a detailed overview of the features offered in your AI dashboard?
	2	How does your dashboard handle data visualization and real-time analytics?
	3	Can the dashboards be customized to suit our specific business needs?
2. Ease of Use and User Interface	4	How do you ensure that the user interface is intuitive and user-friendly?
	5	Are there any training or onboarding resources available to help our team get up to speed quickly?
	6	Do you offer a demo or trial period for us to test the user experience?
3. Data Integration and Compatibility	7	Which data sources and formats does your AI dashboard support for seamless integration?
	8	How do you handle data compatibility issues and ensure data accuracy during integration?
	9	Can you provide examples of successful data integrations with other clients?
4. Scalability and Performance	10	How does your AI dashboard handle large datasets and increasing user demands?
	11	Can you share information about the system's response time and performance under heavy load?
	12	Do you have any scalability-related success stories from other clients?
5. Data Security and Privacy	13	What measures do you have in place to ensure the security and privacy of our data?
	14	Are data stored and transmitted using encryption protocols?
	15	Do you comply with relevant data protection regulations, such as GDPR or CCPA?
6. AI Algorithms and Accuracy	16	Could you provide insights into the AI algorithms used in your dashboard?
	17	How do you ensure the accuracy and reliability of AI-driven insights and predictions?
	18	Can you share any case studies that demonstrate the effectiveness of your AI models?
7. Customization and Flexibility	19	How flexible is your AI dashboard in terms of customization and adapting to our reporting needs?
	20	Can we integrate our branding elements and design preferences into the dashboard?
	21	Are there any limitations or restrictions on customization?
8. Support and Training	22	What kind of customer support do you offer, and what are the response times?
	23	Do you provide training resources, such as documentation, tutorials, or live training sessions?
	24	Is there a dedicated support team available to assist us during implementation and beyond?
9. Cost and ROI	25	Could you provide a breakdown of the total cost of ownership for your AI dashboard?
	26	How do you calculate the potential ROI that your dashboard can deliver for our organization?
	27	Can you share case studies or success stories that highlight the ROI achieved by other clients?
10. Vendor Reputation and References	28	Can you provide references from existing customers who have implemented your AI dashboard?
	29	How long have you been providing AI dashboard solutions, and what is your track record?
	30	Are there any industry awards or recognitions that showcase your performance and reliability?

Table 10.1: AI dashboard vendor assessment (courtesy of University of San Francisco).

Points to Consider	#	Questions to Ask Vendor
1. Data Handling and Storage	1	How does your service handle large volumes of data?
	2	What storage options do you offer for big data processing?
	3	Can you accommodate different data formats and sources?
2. Data Processing and Analysis	4	What tools and technologies do you use for data processing?
	5	How do you handle real-time data processing and analysis?
	6	Can you provide examples of successful data analytics projects you've implemented?
3. Machine Learning Algorithms	7	What machine learning algorithms do you offer for analysis?
	8	How do you ensure the accuracy and reliability of your ML models?
	9	Can you describe a use case where your ML algorithms provided significant insights?
4. Scalability and Performance	10	How scalable is your service for handling increasing data volumes and user demands?
	11	Can you share information about the performance of your platform under heavy loads?
	12	Do you have any success stories related to scalability and performance?
5. Data Security and Privacy	13	What measures do you have in place to protect the security and privacy of our data?
	14	Are you compliant with relevant data protection regulations, such as GDPR or CCPA?
	15	Do you use encryption and access controls to secure data?
6. Integration with Existing Systems	16	How easily can your service integrate with our existing data infrastructure and tools?
	17	Can you provide examples of successful integrations with other clients?
	18	Is there a need for additional training for our team to work with your service?
7. Customization and Flexibility	19	Can your service be customized to meet our specific business needs?
	20	Are there any limitations or restrictions on customization?
	21	Can you accommodate changes in requirements as our needs evolve?
8. Support and Service Level Agreement	22	What level of customer support do you offer, and what are the response times?
	23	Do you have a Service Level Agreement (SLA) that outlines the level of service we can expect?
	24	How do you handle support requests and issue resolution?
9. Cost and Pricing Model	25	Can you provide a breakdown of your pricing model?
	26	Are there any additional costs associated with specific features or usage?
	27	How do you calculate the cost for processing and storing data?
10. Vendor Reputation and References	28	Can you provide references from existing clients who have used your services?
	29	How long have you been providing Big Data and ML services, and what is your track record?
	30	Are there any industry recognitions or awards that showcase your expertise and reliability?

Table 10.2: Big data & ML vendor assessment (courtesy of University of San Francisco).

Summary

The procurement of AI tools and software is not simply a technical procurement but also a strategic act that requires governance, financial scrutiny, and organizational change management. Licensing risks, ROI expectations, and compliance requirements are all magnified in higher education, where data sensitivity and academic integrity are paramount. Dashboards, as the central interface of individual AI tools, are critical: they shape user experience, enable ROI tracking, and ensure that tools are actually usable by faculty, staff, and students. For Brock University, structured acquisition and dashboard-focused evaluation will be essential to building a sustainable and ethical AI ecosystem.

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11. AI in Human Resources

Human Resources (HR) is one of the few universal departments across both the private and public sectors, and this is why it deserves special attention. Whether in a global corporation, a municipal agency, or a university, HR provides the same foundational functions: recruiting, training, supporting, and retaining employees. Because of this universality, artificial intelligence has become one of the most transformative forces in HR worldwide. AI tools now automate repetitive tasks, enhance employee engagement, analyze data at scale, and support more strategic and human-centered HR practices.

11.1. How AI Is Changing HR Operations

AI's impact on HR is both broad and deep:

- **Automation of Routine Tasks:** Payroll, benefits administration, and compliance tracking can now be largely automated, freeing HR professionals for more strategic work. Tools like robotic process automation (RPA) streamline repetitive document processing and time tracking.
- **Data-Driven Decision Making:** HR dashboards powered by AI provide real-time insights into key performance indicators such as hiring efficiency, retention risk, and workforce diversity. Predictive analytics can forecast turnover, skill gaps, and training needs, allowing for proactive interventions.
- **Employee Experience Enhancement:** AI is increasingly used to improve the employee journey, from onboarding to career development. Chatbots provide 24/7 support for employee questions, while (controversial) sentiment analysis tools monitor morale and engagement.
- **Bias Reduction and Fairness:** When designed responsibly, AI can help minimize unconscious bias in recruiting, creating more equitable candidate pools and supporting institutional diversity commitments.
- **Strategic Reinvention of HR Roles:** With automation handling administrative burdens, HR professionals are becoming workforce consultants, AI trainers, and cultural strategists.

11.2. Five Specific Examples of AI in HR

- **Smart Hiring and Screening:** AI can automatically parse resumes, help identify the best-fit candidates, and even conduct initial video interviews with natural language processing to evaluate communication skills. Hilton's AI recruiting chatbot, for instance, cut resume screening time by 90%. Likewise, Brock's students are now facing such recruitment procedures when applying for internships, co-op opportunities, or jobs upon graduation.
- **Personalized Learning and Development:** AI-driven platforms tailor training programs to individual learning styles and career goals. IBM's AI-powered learning system reduced training time by 40% while boosting satisfaction.
- **Predictive Retention Tools:** AI systems can forecast which employees are at risk of leaving and suggest targeted interventions such as mentoring, recognition, or career path adjustments.
- **Sentiment Analysis for Engagement:** AI systems scan employee surveys, communications, and collaboration platforms to gauge workplace morale. This helps HR address burnout and disengagement early, aligning with research on minimizing employee burnout and creating friendlier interactions.
- **AI-Enhanced Performance Reviews:** AI supports continuous performance management by gathering and analyzing real-time data, enabling managers to provide timely feedback rather than relying solely on annual reviews.

11.3. How AI Can Support the HR Department of a University

Universities face distinctive HR challenges: attracting top faculty and staff, supporting diverse international communities, and aligning employee growth with teaching and research missions. AI can assist in several critical ways:

- **Recruitment of Academic and Administrative Talent:** AI-powered hiring systems can help streamline faculty searches by analyzing thousands of applications efficiently while ensuring fairness through bias detection.

- **Career Development and Upskilling:** Personalized AI learning platforms can help staff adapt to technological change, aligning professional development with both institutional needs and individual career goals.
- **Retention and Well-Being:** Albeit of controversial nature, AI sentiment analysis can help detect early signs of disengagement or burnout among faculty and staff. This allows HR to implement targeted wellness programs, workload adjustments, or mentoring initiatives.
- **Diversity and Inclusion:** Canadian universities are committed to equity. AI tools designed to minimize bias can ensure hiring and promotion processes are transparent, fair, and data-driven.
- **Strategic Workforce Planning:** With universities balancing shrinking budgets and expanding mandates, AI dashboards can help HR anticipate long-term staffing needs, predict retirements, and align hiring with institutional strategy.

By integrating AI responsibly, a university's HR department can become not just an administrative office but a driver of institutional agility, resilience, and inclusivity.

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12. An AI Strategy for Brock University

Artificial Intelligence is no longer just a distant frontier of innovation but a present reality reshaping higher education worldwide. At Brock University, AI is already embedded in day-to-day practice across teaching, research, and administration. Faculty design assignments with generative AI in mind; researchers deploy machine learning in health sciences, computer science, and policy studies; and administrative units rely on chatbots, résumé-building platforms, and workflow automation. This breadth of activity is captured in Appendix 2, which documents adoption across every faculty and major administrative unit.

And yet, despite this proliferation, Brock currently lacks an institutional AI strategy. As a consequence, the university's adoption of AI remains fragmented, driven by enthusiastic local leaders but without centralized coordination. The result is a patchwork of innovation that risks duplication of effort, uneven access, ethical uncertainty, and underdeveloped external partnerships.

This final chapter sets parameters for an **AI Strategy for Brock University** and proposes specific, next steps. The purpose is not to control or restrict AI, but rather to empower faculty, staff, and students by providing clear frameworks, shared resources, and a unifying vision.

The strategy aims to:

- Ensure that AI adoption aligns with Brock’s academic values and mission, with AI supporting rather than determining Brock’s identity.
- Support innovation while safeguarding ethical standards, privacy, and data integrity.
- Enhance Brock’s reputation as a forward-thinking institution in Niagara and beyond, with AI facilitating both institutional and regional innovation.
- Provide equitable access to AI literacy, tools, and professional development for the entire community; explore applications of AI that can make existing work easier (“*doing the same just faster and more efficiently*”) or transform work (“*what and how we do things*”).
- Identify and prioritize AI opportunities, including chatbots, administrative automation, and advanced analytics. (see INQ Consulting recommendations)
- Leverage AI to improve operational efficiency, manage growing data complexity, and differentiate the university in a competitive landscape. (see INQ Consulting recommendations)

The strategy is organized around four core pillars: **governance, teaching and learning, research and innovation, and administration**, with cross-cutting commitments to **professional development, community engagement, and data infrastructure**.

12.1. Brock’s Current AI Landscape

Previous chapters and Appendix 2 reveal a dynamic but decentralized environment within which Brock employees apply AI. Decentralization can boost innovation but comes with the risk of duplication of efforts and breaching policies such as privacy and data legislation. The right balance between a decentralized and a centralized AI framework is therefore desirable. Examples of AI initiatives and expertise include:

Teaching & Learning

- Centre for Pedagogical Innovation (CPI) workshops and resources on generative AI, and new initiatives such as the Studiosity project mentioned in Chapter 2.
- Provost’s Advisory Group on AI.
- Faculty experimenting with co-pilot agents, rubric generation, and new forms of assessment.
- Dr. Barak Shoshany’s large astronomy service course in the Department of Physics, featuring a course-specific chatbot to support student learning, demonstrating improved learning outcomes.
- New BA and BSc degrees in AI in development.

Research

- A new Brock Center for Artificial Intelligence (BC4AI) in the Faculty of Mathematics and Science under development.
- Dr. Yifeng Li, Canada Research Chair in Machine Learning for Biomedical Data Science, advancing biomedical data science for drug design.
- Dr. Sean Locke leading an NFRF grant, applying AI to digital health interventions.
- Dr. Karen Louise Smith exploring digital regulation and AI policy.
- PhD program in Intelligent Systems and Data Science.

Administration

- Co-op, Career & Experiential Education (CCEE) uses résumé and interview platforms powered by AI.
- The Library applies AI in metadata generation, systematic review tools, and Makerspace projects.
- Professional and Continuing Studies (PCS) markets AI micro-credentials, including *AI Essentials*.
- Multiple units use tools like Canva AI, Power Automate, and custom chatbots to streamline processes.
- Brock hosts large FIRST Robotics competitions (2025–27).
- Faculty members contribute to national conversations around AI, including academic integrity frameworks like *postplagiarism* (Dr. Rahul Kumar, Dr. Sarah Eaton).
- Niagara Community Observatory policy briefs explore generative AI's implications for local businesses.

These activities demonstrate significant momentum. However, interviews across units also underscore the **need for a unifying strategy**: to ensure equity of access, to review compliance with ethics, privacy and data regulations, to share infrastructure, and to provide institutional leadership.

12.2. AI Strategy: Main Parameters, Short- & Long-term Measures

Brock University's AI strategy must be guided by parameters that **balance a top-down leadership approach** that ensures coherence in policy, governance, and alignment with institutional priorities, **with a bottom-up enabler approach** that empowers faculty, staff, and students to explore innovative applications of AI. Within this framework, **students are** not only beneficiaries but also **active contributors to AI initiatives**, engaging in co-creation, testing, and innovation. **Partnerships with other universities** will be essential, enabling Brock to share best practices, pool resources, and align with provincial objectives in advancing the AI literacy of its population and workforce.

In the **short term**, Brock should launch **AI pilot projects** in all areas of operation through an open call for ideas, facilitated by a **new AI Task Force**, and address several pressing issues (see *Key Actions* below).

Over the **longer term**, the creation of an **AI Innovation Hub** should be considered that serves as the central node for all AI activities at the institution.

The strategy must **enhance student services and accessibility** (including the expansion of open educational resources) and begin **embedding AI skills into the graduate profile**, **expand the research potential** of Brock's scholars, **strengthen cross-sectoral innovation** within and beyond the university, and create pathways that reflect Brock's unique strengths, including exploring new opportunities in **indigenous education and research**.

Together, these parameters and measures will ensure that AI at Brock supports teaching, research, service, and societal impact in an equitable, forward-looking way.

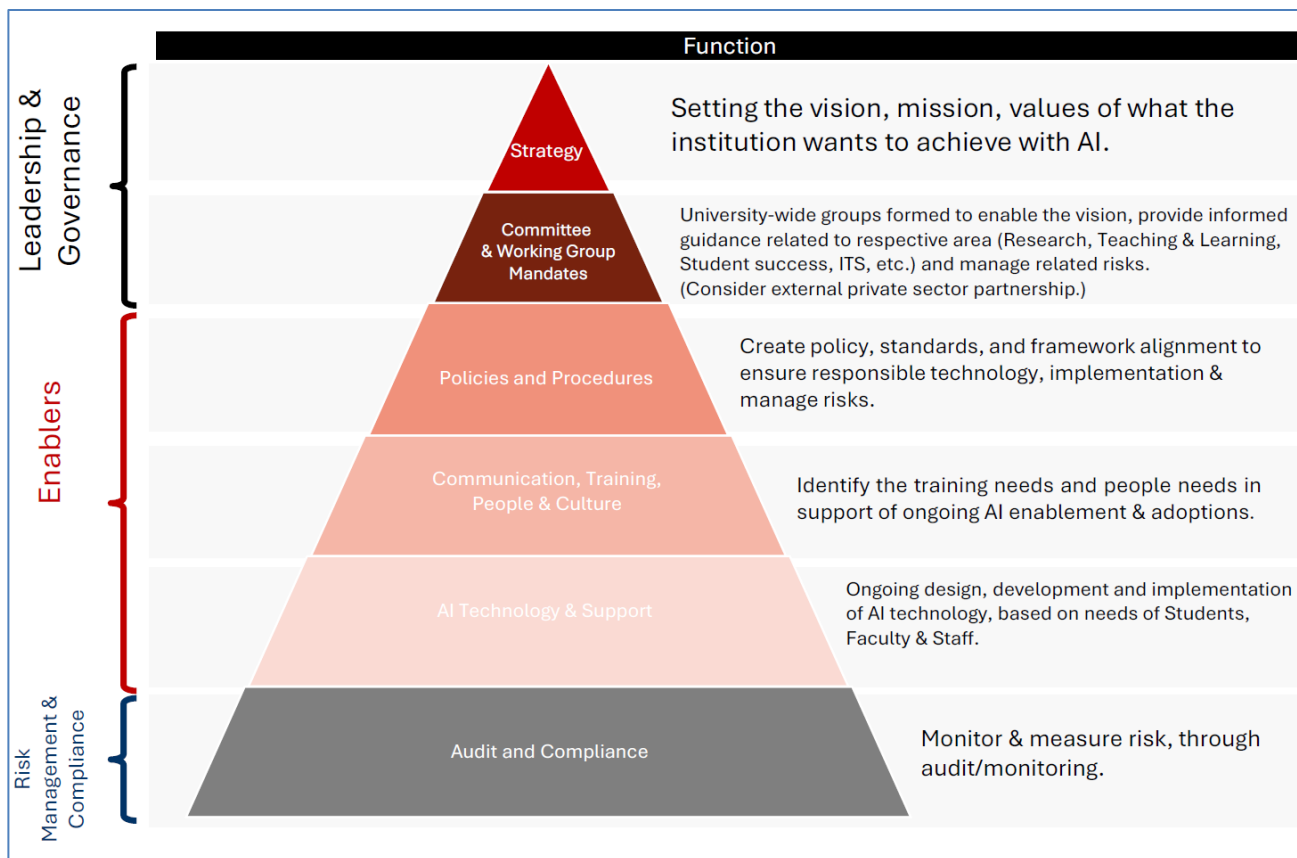


Figure 12.1: Core elements of an AI-ready university (courtesy of ITS).

12.3. Governance

Governance is the foundation of any responsible AI strategy. Without clear oversight, universities risk reputational damage, inequities in access, and legal vulnerabilities. As described in previous chapters, Brock’s CPI and ITS have already responded on multiple levels to the need for governance, including a technical and information security assessment of Copilot (Pro) — with the next step being the identification of use cases for administration and faculty members, building on the work of colleagues outlined in the previous section and Appendix 2. However, Data & AI Governance, for example, is not yet completed. Here, the INQ Consulting report provides clear guidance on how to close this gap.

The governance structure and the adoption of AI will be determined in large part by the organizational structure of the institution (see Figure 12.2).

President	VP	Division	Department, Campus	
President		Equity, Diversity & Inclusion		
		Financial Services		
		Legal, Compliance & Privacy		
		Marketing & Communications		
		University Secretariat, Governance & Policy		
	VP Administration	Ancillary Services	Business & Retail Services Dining, Conference & Brock Card Housing Services	
		Information Technology Services		
		Infrastructure & Operations	Campus Safety Services Custodial Operations Facilities Maintenance Facilities Management Grounds Maintenance	
		Internal Audit & Risk Mgmt		
		People & Culture	Joint Health & Safety Committee Temporary Employee Services	
		VP External	Alumni Relations	
			Development & Donor Relations	
			Government Relations	
		Provost	Academic Financial Planning & Budgeting	
			Applied Health Sciences	
	Brock International			
	Education		Burlington Campus	
	Goodman School of Business			
	Graduate Studies & Postdoctoral Affairs			
	Humanities		Marilyn I. Walker School	
	Indigenous Engagement			
	Institutional Planning, Analysis & Performance			
	Library			
	Mathematics & Science		Technical & Scientific Services	
	Office of Vice-Provost Academic			
	Registrar & Enrolment			
	Social Sciences			
	Strategic Initiatives			
	Student Services		Brock Sports & Recreation Student Affairs Student Life & Success Student Wellness & Accessibility	
	Teaching & Learning		Centre for Pedagogical Innovation Co-op, Career, and Experiential Education Office of Vice-Provost Teaching & Learning Professional & Continuing Studies	
	VP Research		Research Enterprise	Animal Care Brock LINC VPMI CCOVI Office of Research Services Research Ethics

Figure 12.2: Organizational chart of Brock University (October 2025).

Brock’s Path Forward

It is suggested that Brock establish a **Brock University AI Task Force** by **January 1, 2026**, with the following mandate and structure:

Mandate:

- **Policy Development** – establishing or revising/completing guidelines for data, privacy, security, procurement and intellectual property concerning AI, and the use of AI in teaching and research.
- **Ethics Framework** – ensuring human oversight, transparency, and equity in AI adoption.
- **Professional Development Oversight** – ensuring consistent training for staff, students, and faculty, with extension through PCS.
- **Trust Building** – addressing myths, fears, and ethical concerns through open consultation.

- **Communication** – communicating Brock’s approach to AI to the university community and public.
- **Pilot Projects** – selecting and supporting the first AI Innovation Projects at Brock.
- **AI Innovation Hub** – launching a central hub that coordinates, oversees or supports all AI activities at the institution and keeps track of them.

Structure:

- The **Task Force membership** includes wide representation from across the institution, including administrative units (President’s and Provost’s Offices, OPC, ITS, Registrar’s Office, Student Services, Advancement, International, ORS, CPI, Legal, Compliance & Privacy Office), faculty and staff members, undergraduate and graduate students, library, and FGSPA. The above org chart provides guidance.
- **Six working groups**, comprised of members of the Task Force, each focusing and delivering on the six key actions described below by the end of 2026.

Implementation Model:

Toronto Metropolitan University’s advisory framework, described in chapter 3, may provide inspiration for the mandate, structure and Terms of Reference for Brock’s AI Task Force. However, various AI governance models exist that may present other viable options (see <https://books.lib.uoguelph.ca/aisplaybook/>.) It is suggested that the formation of the Task Force begins immediately. It should be fully operational by January 1st, 2026, beginning its work by defining the **Terms of Reference**.

Key Actions

The AI Task Force will operate for twelve months (January 1st - December 31st, 2026) and deliver **six major outcomes**:

- 1) Launch of an **AI@Brock website** ahead of the 2026 Spring Open House, serving as a central resource and source of information concerning all matters of AI at the university.
- 2) **Complete** the above **policy and ethics frameworks** by June 30th, 2026, leaning on the INQ Consulting report.
- 3) Host **two town hall meetings** and conduct a **survey** by June 30th, 2026, to build **trust in AI** and assess the need for **professional development. Identify student and/or employee AI ambassadors** in each unit (administration, faculty, department) of the university.
- 4) Launch an **AI micro-credential** for students, faculty, staff and members of the public through PCS by September 1st, 2026, consisting of several modules that cover the basics, ethics, applications and business aspects of AI.
- 5) Initiate an **open call for projects** among faculty, staff and students regarding the application of AI in all area of operation, similar in spirit to ASU’s [AI Innovation Challenge](#) (deadline: April 1st, 2026; adjudication: May 15th, 2026; start date of projects: July 1st, 2026); focus on a manageable number of projects that have a good chance of success; create an **institutional data catalogue to support teaching and research**.
- 6) **Launch** an **AI Innovation Hub** by January 1st, 2027, serving as the central node of the institution for all matters concerning AI, including internal (teaching, research, administration) and external (partnerships, innovation, regional upskilling) activities.

This Hub would set Brock apart from many other universities in that it takes a forward- and outward-looking approach to AI in academia, recognizing the need for upskilling and innovation opportunities not only for its own employees and students but also its regional ecosystem.

The Hub could also include an [AI Playground](#) or [AI Sandbox](#), i.e., “a secure environment in which to explore Generative AI, mitigating many security and privacy risks and ensuring the data entered will not be used to train any vendor large language models (LLMs).”

The specific structure, mission and vision of the Hub will emerge organically through the work of the Task Force throughout 2026 and, again, there are several options. Figure 12.3 presents one such option and serves as a starting point for the deliberations about the Hub.

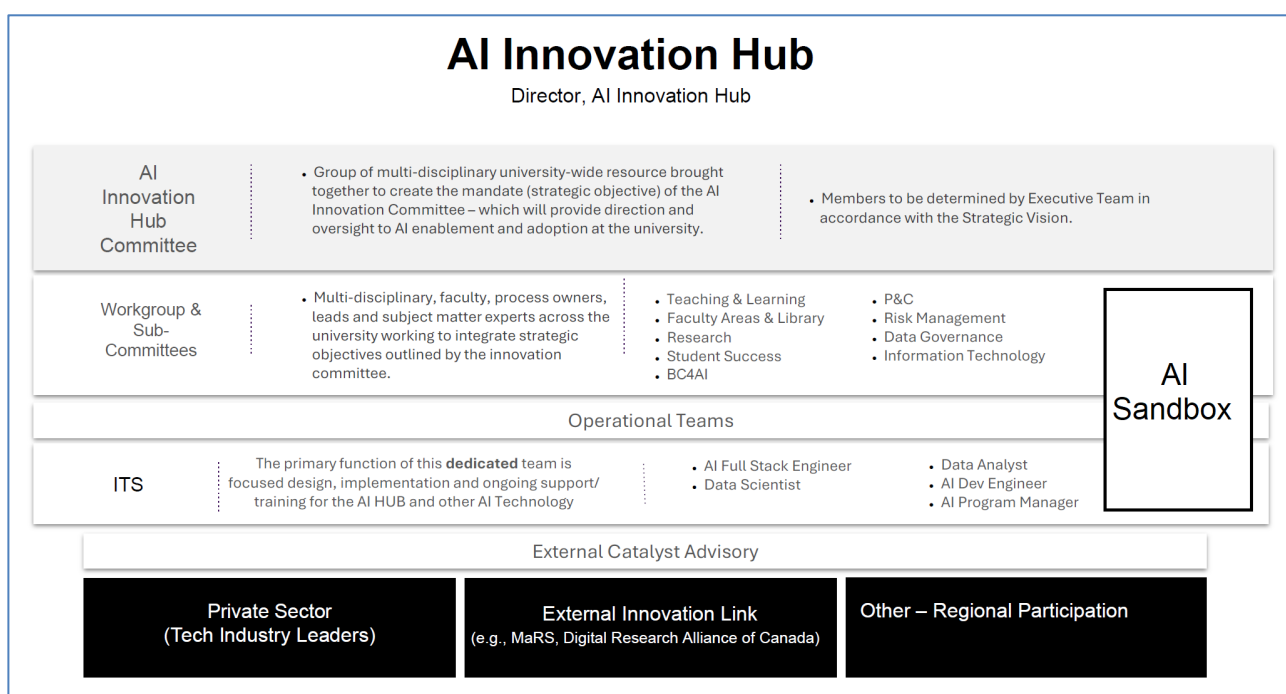


Figure 12.3: AI Innovation Hub: potential structure (courtesy of ITS).

The institution will have to invest significantly in secure, scalable data storage, high-performance computing resources, and staffing to support the technical side of the Hub’s operations and an AI Sandbox.

Areas of Focus

For the six outcomes above, it is suggested that the Task Force consider the following areas and opportunities in teaching & learning, research & innovation, administration, professional development and community engagement for applications of AI.

12.4. Teaching and Learning

AI in teaching is often framed through fear of plagiarism, but as Brock faculty have argued (e.g., Dr. Kumar's *postplagiarism* framework), the real opportunity lies in reimagining pedagogy. A coherent teaching strategy must balance integrity with innovation.

Opportunities

- Expand CPI resources into institution-wide policy: defining ethical use, pedagogical merit, and expectations for transparency in i) the design of assignments and other types of assessments and, likewise, ii) the corresponding student submissions (already done in large part).
- Introduce [Student AI Readiness Assessments](#).
- Adopt the **University of Colorado Boulder AI Assessment Scale** as a model. This 1-5 scale allows instructors to indicate whether AI is prohibited, partially permitted, or fully integrated in assessments. Its nuance avoids a simplistic “ban or allow” binary view.
- Encourage **oral examinations** in smaller courses, especially in upper years and at the graduate level, to assess critical thinking and communication skills; explore other [methods of secure assessment and their overall weight in student grades](#).
- In partnership with ITS, explore enterprise-level access to **ChatGPT EDU** or equivalent platforms, ensuring secure use of generative AI without data leakage.
- Following the University of Texas at San Antonio's model, appoint **Faculty and Student AI Ambassadors** within each academic department. Ambassadors would mentor peers, pilot tools, and guide discipline-specific integration. Similarly, Western University has launched a **Generative AI Teaching Fellows** program that will seek to cultivate and support the use of AI in teaching and learning across campus. Appointed fellows will undertake projects to expand the use of AI in the classroom, and offer workshops and other professional development activities.
- Complete the development of the **BA in AI** (Digital Humanities) and **BSc in AI** (Computer Science).
- Introduce a **Minor in AI**, open to all students.
- Expand PCS micro-credentials into a **stackable certificate in AI** (launch date: September 2026), serving faculty, staff, students, and external learners.
- Offer workshops on classroom AI integration, drawing on CPI's asynchronous resources, symposia, newsletters and program/department-level conversations.
- Provide release time or grants for faculty to redesign courses around AI pedagogy.
- Utilize AI to **boost the development of open educational resources** at the institution (open call for projects).
- Employ AI to generate personalized learning environments (assignments, examples, exams) that facilitate the **merging of large service courses** of the same topic (e.g., Statistics) offered to different majors into a single course. Likewise, explore **more efficient offering of small courses**.
- Support the **Library** in tracking or participating in the provincial OCUL Artificial Intelligence and Machine Learning ([AIML](#)) Program as well as [CARL AI](#) and [CRKN](#) initiatives and policy reviews.

Outcome: By spring 2027, Brock students will graduate with baseline AI literacy, while faculty will feel supported, not threatened, by AI tools.

12.5. Research and Innovation

Brock University already houses leading researchers in biomedical AI, digital regulation, pedagogy, and machine learning. Building on these strengths, the following **strategic actions** concerning AI in research are proposed:

- Capitalize on the **launch of the Brock Centre for AI (BC4AI)**, encouraging membership from all Faculties.
The Center can i) support **interdisciplinary research**, hosting seed funding competitions, seminars, and collaborative projects, ii) **help coordinate applications** for NSERC CREATE grants and other federal funding, iii) partner with PCS or FGSPA to provide **AI certifications for graduate students**, iv) encourage collaborations with and among the humanities and social sciences, exploring ethical, cultural, and regulatory dimensions, v) host biannual **AI Days**, featuring faculty research, student projects, and community partnerships, providing a platform for sharing best practices.
- Develop **policies covering grant applications, journal submissions, theses, and data analysis**.
- Ensure **compliance with Tri-Council** (SSHRC, NSERC, CIHR) and international (e.g., NSF, Horizon Europe) **standards**.
- **Integrate AI training into thesis preparation, research methods courses**, and professional development workshops.

Outcome: Support Brock researchers and research students in adopting and capitalizing on AI to enhance research productivity and innovation.

12.6. Administration

Many opportunities and areas exist in administration and administrative services where AI can make a significant difference concerning service level, quality of output, and employee satisfaction.

Opportunities

Student Services:

- Develop a **Student Services Chatbot**, integrating advising, financial aid, and registrar queries.
- Pilot multilingual capabilities for international student support.
- Build on previous success and continue to explore the use of AI to improve accessibility.

Marketing & Communications:

- Leverage AI for personalized campaigns, audience analytics, and content generation.
- Adopt tools to manage Brock's digital footprint in a competitive recruitment landscape.

Advancement and Alumni Relations:

- Deploy predictive analytics for donor engagement.
- Personalize alumni outreach using AI content generation.

Office of People & Culture:

- Apply AI in recruitment (screening, diversity analytics), onboarding, and employee development.
- Explore AI-supported performance review tools.

Information Technology Services:

- Automate ITS Help Desk operations.
- Enhance internal communication and communication with clients across campus.
- Use AI for predictive infrastructure planning and cybersecurity monitoring.

Institutional Planning, Analysis, and Performance (IPAP):

- Implement AI for predictive enrolment modeling and programs analytics.
- Automate preparation of annual reports.

Office of Research Services

- Centralize research grant databases.
- Automate notification systems and research output assessments.
- Automate preparation of annual reports.
- Leverage AI to support knowledge mobilization.

Office of Indigenous Engagement

- Explore the application of AI in advancing the mission of the indigenous portfolio (see <https://books.lib.uoguelph.ca/aiplaybook/chapter/ai-and-indigenous-perspectives/>), including [Indigenous Language Revitalization](#).

Outcome: By prioritizing high-ROI areas, Brock can improve service quality while freeing staff capacity for higher-value tasks.

12.7. Professional Development and Community Engagement

By using AI, Brock University can enhance professional development opportunities and widen its impact on the community, establishing more effective programs, collaborations and partnerships.

Opportunities

Professional Development:

- Offer tiered AI training: beginner (literacy), intermediate (application), advanced (discipline-specific).
- Provide **train-the-trainer** (TtT) programs for departmental/unit AI Ambassadors.
- Incentivize faculty innovation with grants and teaching awards focused on AI integration.

Community Engagement:

- Expand PCS's AI offerings to serve Niagara businesses, positioning Brock as a regional hub for workforce AI literacy.
- Host public lectures, open robotics competitions, and policy dialogues to demystify AI for the broader community.
- Engage Indigenous and international perspectives to ensure inclusivity in strategy development.

Summary

Brock University stands at a threshold. AI is already embedded across the institution, from classrooms to labs to administrative offices. But without a unified strategy, the university risks falling behind peer institutions who have already begun to institutionalize governance, policy, and investment.

By establishing an AI Task Force and an AI Innovation Hub, developing clear guidelines and support for teaching and research, prioritizing high-impact administrative applications, investing in professional development, and strengthening data infrastructure, Brock can position itself as a national leader in ethical and innovative AI adoption.

This strategy is not about technology alone. It is about equipping students with the skills for an AI-powered economy, supporting faculty in reimagining pedagogy, enhancing research competitiveness, and streamlining services for staff. It is about building trust, ensuring equity, and engaging the Niagara community in shared innovation.

Rarely does Brock University encounter an opportunity to enhance its reputation significantly and quickly. AI presents one such opportunity.

And while the launch of an AI Innovation Hub and the staffing required to meet data-governance industry standards will require significant investments, the potential for fundraising among visionary donors who want to push the university forward will be huge.

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AI Glossary

(Courtesy of University of San Francisco.)

Algorithm – A set of rules that a machine can follow to learn how to do a task.

Artificial intelligence – Machines acting in ways that simulate or mimic human intelligence.

Autonomous – A machine that can perform tasks without human intervention.

Backward chaining – Working backward from the desired output to find supporting data.

Bias – Assumptions made by a model that can affect results.

Big data – Datasets too large or complex for traditional processing.

Chatbot – A program that mimics human conversation via text or voice.

ChatGPT – OpenAI's language model for dynamic, context-aware conversation.

Cognitive computing – Another term for AI, often used to avoid sci-fi connotations.

Computational learning theory – Study of machine learning algorithms.

Computer vision – AI that processes and understands visual information.

Conversational AI – AI for natural, interactive human-machine communication.

Corpus – Large dataset of text/speech for training.

Data mining – Discovering new patterns in datasets.

Data science – Interdisciplinary field using statistics, computer science, and more to solve data problems.

Dataset – Organized collection of related data points.

Deep learning – AI mimicking brain-like learning from structured data.

Edge AI – AI processed locally on/near devices instead of the cloud.

Entity annotation – Labeling text with information (e.g., people, places).

Entity extraction – Adding structure to data for machine readability.

Forward chaining – Working from a problem to potential solutions.

General AI – AI capable of any human intellectual task.

Hyperparameter – Settings affecting how a model learns.

Intent – Label defining the purpose of a statement.

Job roles (that work with AI include):

Data Scientist, Machine Learning Engineer, AI Researcher, AI Developer/Engineer, NLP Engineer, Computer Vision Engineer, Robotics Engineer, AI Ethicist, AI Product Manager, AI Consultant, AI Trainer/Annotator, AI Policy Analyst.

Label – Identifies desired output in training data.

Large Language Model (LLM) – A language model trained with self-supervised machine learning on a vast amount of text, designed for natural language processing tasks, especially language generation. (source: Wiki)

Linguistic annotation – Tagging sentences with subjects or features.

Machine intelligence – The ability of machines to simulate human-like cognitive functions such as learning, reasoning, perception, and decision-making, often achieved through advanced algorithms and machine learning.

Machine learning – Algorithms that learn from data without explicit programming.

Machine translation – Automated text translation.

Model – Result of training an algorithm on data.

Neural network – Brain-inspired computing system.

Natural language generation (NLG) – Machine-created human-readable text/speech.

Natural language processing (NLP) – A field of AI that teaches computers to understand, process, and generate human language, whether written or spoken.

Natural language understanding (NLU) – Recognizing intended meaning in language.

Overfitting – Model too tailored to training data, performing poorly on new data.

Parameter – Model variable for predictions.

Pattern recognition – Finding trends in data.

Predictive analytics – Forecasting outcomes using historical data.

Python – Popular programming language.

Reinforcement learning – AI learning via trial and error guided by feedback.

Semantic annotation – Tagging data to improve search relevance.

Sentiment analysis – Detecting opinions in text.

Strong AI – AI equal to human intelligence.

Supervised learning – Training an algorithm with labeled datasets.

Test data – Unlabeled data to check performance of a model.

Training data – Data used for model training.

Transfer learning – Applying knowledge from one task to another.

Transformer models – A class of neural networks that excel at processing sequential data like text by using a mechanism called self-attention.

Turing test – A criterion for a machine's behavior being indistinguishable from a human's.

Unsupervised learning – An algorithm learning from unlabeled data.

Validation data – New labeled data to check training performance.

Variance – Change in a model's function during training.

Variation – Different ways a goal can be expressed in language.

Weak AI – Narrow AI focused on specific tasks.

Appendix 1 - Top AI Tools (for Higher Education)

Source: ChatGPT Plus – 13 July 2025

See also: [The Top 100 Gen AI Consumer Apps, 4th edition, 2005.](#)

The following list is by no means complete or authoritative, but it provides examples of important AI tools. Note that there may be newer versions of each AI tool by the time of reading this appendix.

Top 12 Generative AI Programs

1. [ChatGPT \(OpenAI\)](#)

ChatGPT, developed by OpenAI, is a versatile large language model used for conversation, writing, translation, coding, summarization, and tutoring. It is widely adopted in education, research, and enterprise contexts. ChatGPT supports tools like **DALL·E for image generation, code interpreter for data analysis, and PDF/file reading capabilities. ChatGPT's Custom GPTs allow users to build domain-specific AI assistants.** Institutions are increasingly deploying **ChatGPT Edu** — a version tailored for education that supports larger context windows, file uploads, and data privacy compliance. Faculty use ChatGPT for drafting curriculum materials, writing grant proposals, or generating feedback, while students leverage it for studying and content review. Despite limitations like occasional factual errors (“**hallucinations**”), it remains a leading generative AI model due to its flexibility, user-friendly interface, and extensive plugin ecosystem. It continues to evolve as OpenAI integrates multimodal features and enhances accuracy.

2. [DALL·E 3 \(OpenAI\)](#)

DALL·E 3 is OpenAI's latest image-generation model that transforms detailed text prompts into visually compelling, high-resolution images. It is integrated with ChatGPT, allowing users to generate and edit images through natural language instructions. This includes inpainting — changing or replacing parts of an image while preserving context — which is especially useful for designers, educators, and content creators. DALL·E 3 is widely used in educational contexts to create visual learning aids, scientific illustrations, and conceptual diagrams for courses and research publications. It offers a balance between creative freedom and responsible AI design, restricting the generation of harmful or photorealistic images of real individuals. **Accessible via ChatGPT and through APIs,** it is favored by faculty and students in art, media, marketing, and communication programs. DALL·E 3 has significantly improved over previous versions in understanding nuanced prompts, enabling more accurate and imaginative visuals aligned with user intent, which supports innovation in teaching and learning design.

3. [Stable Diffusion \(Stability AI\)](#)

Stable Diffusion is an **open-source generative image model** that enables users to create stunning visuals from text prompts. Unlike proprietary models, it offers full local deployment, giving users control over image generation and model customization. Researchers and educators appreciate this transparency and adaptability for academic or creative experimentation. With models trained on extensive visual datasets, it excels in artistic and stylized imagery. Its flexibility allows fine-tuning for domain-specific needs,

such as scientific visualization, design prototyping, or concept art in humanities. Popular User Interfaces (UIs) like AUTOMATIC1111 and DreamStudio simplify access for non-coders. Stable Diffusion supports inpainting, outpainting, and image-to-image translation, providing rich capabilities for iterative visual refinement. Its open ecosystem encourages contributions, with new models and plugins emerging regularly. Though it lacks some of the safety guardrails of commercial alternatives, its openness, customization potential, and active developer community make it **a preferred choice in academic labs, design studios, and digital humanities research.**

4. Midjourney

Midjourney is a generative AI platform focused on producing highly stylized and artistically rich **images from text prompts. Operating through Discord**, it enables users to quickly iterate on creative concepts, offering multiple variations and refinements for each prompt. Midjourney is widely praised for its aesthetic output, often resembling digital illustrations, concept art, or stylized photography. It's especially popular among artists, graphic designers, and creative professionals in education. In academic contexts, it is used in art and design programs for inspiration, rapid prototyping, and visual storytelling. While less customizable than open-source tools like Stable Diffusion, its intuitive interface and consistently beautiful results make it accessible and effective for educators and students alike. Limitations include a lack of advanced editing tools (like inpainting) and limited control over image realism. Nevertheless, its distinct visual signature and strong community support position Midjourney as **a go-to generative tool for imaginative and expressive visual outputs in higher education.**

5. Jasper

Jasper is a generative **AI platform tailored for marketing, branding, and content teams**, helping users create persuasive copy, blog posts, emails, social media content, and more. It features over 50 templates and allows customization of tone, brand voice, and audience targeting. Jasper's *Brand Voice* tool lets institutions define consistent messaging for external communications. **For universities, this is particularly useful in enrollment marketing, alumni engagement, and advancement communications. Jasper's AI can generate newsletters, promotional emails, and event materials in minutes, freeing staff to focus on strategy.** Its collaboration features and project workspaces streamline teamwork in communications departments. Unlike general-purpose LLMs, Jasper is optimized for conversion-focused content, making it ideal for recruitment campaigns and public-facing content. Integrations with Grammarly, SurferSEO, and CMS platforms add value. **While it's more limited in academic writing, its marketing specialization makes Jasper an indispensable AI assistant for university communications and outreach initiatives.**

6. Copy.ai

Copy.ai specializes in **AI-generated content for business communications**, with strengths in sales, customer engagement, and digital marketing. It offers prebuilt workflows for email campaigns, LinkedIn outreach, product descriptions, and ad copy, making it ideal for administrative units like admissions, career services, and development. **Universities use Copy.ai to automate large-scale communications such as donor outreach, student recruitment, and social media campaigns.** The platform supports team collaboration, integrates with CRM tools like HubSpot and Salesforce, and offers features for A/B testing messaging. Copy.ai also provides tools for writing in different tones and styles, making it suitable for both formal and informal content. **For higher education teams managing dozens of communication channels, Copy.ai speeds up content**

production and helps maintain consistency. Though not built for academic writing, it can be useful in creating student-facing materials, web content, and institutional messaging. **Its intuitive interface and high-output quality make it a practical asset for administrative staff.**

7. Runway ML

Runway ML is a powerful AI creative suite combining video, image, and audio generation tools with deep learning models. It offers a user-friendly platform for professionals and educators to experiment with AI-based video editing, object removal, motion tracking, and text-to-video capabilities. Runway's *Gen-2* model allows text-to-video creation — users can input prompts and generate short videos with coherent motion and visual storytelling. **In education, Runway is used in media studies, digital art, film production, and communication courses to teach visual storytelling and AI-enhanced creativity. Its browser-based interface removes the need for high-end hardware, and its collaborative features make it suitable for classrooms and group projects.** The tool also integrates with other platforms like Adobe Premiere and After Effects, enhancing workflows for academic content creators. With its expanding suite of AI models, Runway ML is redefining how educators and students engage with **digital media production in both research and teaching contexts.**

8. Adobe Firefly

Adobe Firefly is Adobe's generative AI platform integrated across tools like Photoshop, Illustrator, and Express. It enables users to generate and modify images, text effects, and vector graphics from natural language prompts. Unlike many other generative tools, **Firefly is designed specifically for commercial and educational use, with all training data sourced from licensed or public domain content.** Firefly features include text-to-image generation, generative fill, content-aware edits, and stylized font creation. **For faculty and students in design, marketing, and visual arts, Firefly streamlines creative workflows, prototyping, and classroom assignments.** It integrates seamlessly with Creative Cloud, allowing educators to stay within familiar environments. Institutions benefit from Adobe's enterprise-grade compliance, making it suitable for FERPA and IP-conscious use cases. While not as open-ended as some other tools, Firefly's strength lies in its user-friendliness, integration with industry-standard software, and clear licensing model — **ideal for higher education contexts focused on design, branding, and instructional media.**

9. Claude (Anthropic)

Claude, developed by Anthropic, is a large language model designed for safe, conversational AI. It emphasizes alignment with human values and reduces harmful outputs through **“constitutional AI” principles. Claude excels at structured reasoning, Socratic questioning, summarization, and document analysis.** It supports **large context windows (up to 200,000 tokens in Claude 3 Opus), making it ideal for analyzing long documents like academic articles or policy manuals.** Claude is increasingly used in educational environments for tutoring, grading assistance, research support, and meeting summarization. Its tone is more thoughtful and less assertive than ChatGPT, making it appealing for collaborative work and exploratory learning. **Educators use Claude to engage students in philosophical debates, text analysis, and structured writing. Researchers rely on it for data summarization, proposal drafting, and peer review simulation.** With a growing suite of APIs and partnerships (e.g., with Notion and Slack), Claude is carving out **a niche as a trusted, ethical AI assistant for academia.**

10. [Gemini \(formerly Bard\) \(Google DeepMind\)](#)

Gemini is Google's family of multimodal generative AI models developed by DeepMind, integrated into Google Workspace and other products. It supports advanced reasoning, text, image, and code generation, offering seamless AI support across Gmail, Docs, Slides, and Google Cloud. Gemini excels at productivity-related tasks: drafting emails, summarizing meetings, creating visual presentations, and automating research workflows. For educators, Gemini enhances lesson planning, lecture writing, and resource curation. Students use it for studying, coding help, and summarizing academic materials. Gemini's integration with Google Scholar and Bard offers a research edge, while Google Cloud tools (Vertex AI, Colab) appeal to technical faculty. Its multimodal capabilities enable fluid interaction between images, documents, and charts which is especially useful in data science, engineering, and design. With tight integration into institutional IT environments already using Google products, Gemini stands out for its interoperability, enterprise-grade security, and broad feature set, making it a versatile solution for university teaching, research, and administration.

11. [Microsoft Copilot \(in Microsoft 365\)](#)

Microsoft Copilot integrates AI into the Microsoft 365 suite (Word, Excel, PowerPoint, Outlook, Teams), allowing users to draft documents, generate summaries, automate data analysis, and create presentations directly within the tools they already use. For universities running on Microsoft ecosystems, Copilot supports administrative efficiency, academic planning, and instructional content creation. Faculty use it to generate syllabi, reformat research drafts, and visualize data. Administrators benefit from features like agenda summarization in Teams, email drafting in Outlook, and task extraction from meeting notes. In Excel, Copilot can analyze large datasets or run regressions with natural language prompts. It also supports accessibility by offering real-time language refinement and translation. For students, Copilot serves as a study companion, summarizing readings, helping with reports, or generating flashcards. With enterprise-level security and compliance, Microsoft Copilot is increasingly becoming a default AI assistant for teaching, research, and institutional operations across digitally mature academic environments.

12. [Grok \(xAI / Twitter\)](#)

Grok was developed by xAI and integrated into X (formerly Twitter). While less academically focused than ChatGPT or Gemini, Grok is designed to interact with live social data, offering real-time trend analysis and conversational responses with a personality-driven tone. In higher education, Grok could serve as a media monitoring tool for communications departments, policy researchers, or journalism programs. It is positioned as a less-filtered alternative to traditional LLMs and may appeal to researchers interested in digital discourse, cultural sentiment analysis, or real-time opinion mining. Grok's integration with X data enables exploratory work in fields like political science, sociology, or media studies, particularly for those studying social movements or rapid-response communication. While still evolving in functionality, Grok reflects a growing class of socially integrated AIs that blur the lines between public discourse and computational insight.

Top 25 AI Tools for University Administration

1. [Capacity](#)

Capacity is an AI-powered support platform that **automates internal workflows and improves responsiveness to student and staff inquiries. It acts as a 24/7 knowledge management assistant, integrating with systems like SIS, Customer Relationship Management (CRM), LMS, and HR Information Systems (HRIS) to surface accurate answers instantly. Universities use Capacity to streamline IT support, financial aid questions, onboarding, admissions queries, and HR requests. Its AI chatbot can handle thousands of questions simultaneously, drastically reducing reliance on live staff while increasing service availability. Capacity also includes workflow automation, ticketing, and knowledge base management, improving administrative efficiency. For example, students can ask about deadlines, class schedules, or campus policies without navigating multiple websites or portals. Staff benefit from reduced email volume and faster task resolution. Capacity complies with privacy standards, making it suitable for FERPA-sensitive environments. By centralizing institutional knowledge and automating service delivery, Capacity enhances both operational productivity and the user experience across academic and administrative departments.**

2. [Coursebox](#)

Coursebox is an AI-assisted platform that **enables users to rapidly convert existing educational materials (e.g., PDFs, slide decks, and videos) into interactive online courses.** It is widely used by universities to streamline the development of **professional development modules, onboarding content, and microcredentials.** Coursebox uses generative AI to **organize content, write summaries, create quizzes, and structure learning flows based on Bloom's taxonomy or other pedagogical models.** Faculty and staff without instructional design backgrounds can create polished e-learning materials in minutes. **It supports Sharable Content Object Reference Model (SCORM, a set of technical standards for e-learning) and LMS integration,** ensuring compatibility with platforms like Moodle or Canvas. Universities have used Coursebox for faculty AI upskilling, health and safety training, and graduate career readiness modules. It also allows collaboration among instructors and HR teams. For resource-constrained units, Coursebox dramatically reduces course creation time and costs while maintaining quality. Its intuitive design, AI-guided editing, and responsive layout make it **an ideal tool for scaling online and blended learning at the institutional level.**

3. [Otter.ai](#)

Otter.ai is a **real-time transcription and meeting summarization tool** that leverages AI to convert speech into searchable, structured text. In university administration, Otter is commonly used to transcribe academic council meetings, committee sessions, interviews, and faculty boards. Its automatic summarization, speaker identification, and timestamped notes make meeting minutes faster to produce and easier to share. **Otter supports integrations with Zoom, Google Meet, and Microsoft Teams,** enabling passive recording of online discussions. University administrators also use Otter to track decisions, assign follow-ups, and ensure accountability in cross-departmental meetings. It improves accessibility for participants with hearing impairments and can serve as a study aid for students reviewing recorded lectures. Otter's collaborative interface allows teams to highlight text, insert comments, and generate action items directly from the transcript. With both real-time and recorded transcription options, Otter saves time and ensures institutional memory is preserved. Its affordability and ease of use make it a popular productivity booster.

[4. Turnitin \(with AI Writing Detection\)](#)

Turnitin has been considered a **well-established academic integrity platform used widely across universities for plagiarism detection, writing feedback, and originality verification**. In recent updates, Turnitin has introduced AI-writing detection features to flag content that may have been generated by large language models. This is crucial as generative AI becomes more common in student submissions. **Turnitin integrates directly with major learning management systems like Canvas, Blackboard, and Moodle**, enabling seamless assignment submission and analysis. Beyond detection, its Feedback Studio helps faculty provide formative feedback using prebuilt rubrics, comments, and grammar tools. Despite its long history and recent updates, this tool is now widely understood as ineffective, and many universities are discontinuing their Turnitin subscriptions.

[5. Gradescope](#)

Gradescope uses **AI-assisted grading to streamline the evaluation of exams, homework, and assignments, especially for STEM and quantitative courses**. **Developed at UC Berkeley and now part of Turnitin**, Gradescope allows instructors to grade handwritten or typed submissions consistently and quickly by applying AI-trained rubrics. Its most powerful feature is the ability to group similar answers, enabling batch grading of repeated student responses, such as in multiple-choice, short-answer, or math problems. This dramatically reduces grading time while maintaining fairness and transparency. **Gradescope also provides analytics that help instructors identify common misconceptions or problem areas**. Faculty can use it for exams, programming assignments, and paper-based assessments. Integration with LMS platforms ensures smooth workflow from submission to gradebook entry. For large-enrollment courses or departments aiming to **improve grading equity and feedback quality**, Gradescope is a transformative tool. It is especially valuable for teaching assistants, new instructors, and courses with a high volume of technical assessments.

[6. Questionmark](#)

Questionmark is a **robust assessment platform used by universities to design, deliver, and analyze secure online tests and surveys**. It supports various question types, adaptive testing, and psychometric analysis, making it ideal for certification programs, placement exams, and faculty evaluations. The platform includes AI-driven analytics that help administrators and instructors identify trends, knowledge gaps, and performance issues. Questionmark's security features such as browser lockdown, proctoring integration, and randomized question delivery, ensure test integrity. It is fully SCORM and Learning Tools Interoperability (LTI) compliant, integrating seamlessly with major LMS platforms. Institutions also use it for compliance training and accreditation reporting. Its dashboard and reporting tools provide real-time feedback to both learners and instructors. With **multilingual capabilities** and accessibility compliance, Questionmark serves diverse student populations. It is particularly valuable in quality assurance efforts across academic units, helping standardize assessment practices while enabling data-driven curriculum improvements and strategic decision-making.

[7. Blackboard \(with AI Insights\)](#)

Blackboard is a leading learning management system used by universities to manage courses, content, and assessments. Recent iterations of Blackboard incorporate AI-powered features such as predictive analytics, **personalized learning pathways, and automated feedback**. These tools help instructors identify at-risk students, tailor interventions, and improve learner engagement. Administrators benefit from institutional-

level dashboards showing course activity, engagement trends, and performance benchmarks. Blackboard's integration with tools like Ally also promotes equitable learning by offering accessibility improvements through AI (e.g., automatic alternative formats). Faculty can use AI-supported grading rubrics and plagiarism detection, while students receive instant feedback on quizzes and assignments. The LMS supports blended and online learning models, mobile access, and open architecture for third-party apps. For universities seeking data-driven teaching and learning support within a familiar ecosystem, Blackboard's AI features add a layer of actionable insight to enhance retention, support academic advising, and streamline instructional delivery.

8. MetaCOG

MetaCOG is a **cognitive and metacognitive analytics tool designed to assess how students think, reflect, and learn**. It employs AI to analyze students' written reflections, surveys, and open-ended responses to generate insights into their learning processes. **Used primarily in institutional research and assessment offices**, MetaCOG helps identify patterns in student motivation, self-regulation, and engagement. These insights inform curriculum redesign, student support interventions, and institutional strategy. It is particularly useful in **first-year experience programs**, learning communities, and general education assessment. Faculty can use MetaCOG dashboards to adjust instructional strategies based on students' cognitive development over time. Unlike traditional test-based metrics, MetaCOG evaluates learning dispositions and metacognitive growth, offering a more holistic view of student success. Its AI engine can also assist in scoring qualitative responses across large cohorts, saving time while preserving nuance. For institutions interested in outcomes beyond GPA, MetaCOG offers a valuable lens into the "how" of learning.

9. Top Hat

Top Hat is an active learning platform that enhances student engagement through real-time polling, quizzes, discussions, and attendance tracking — all accessible via mobile devices. Its AI-enhanced analytics provide instructors with insights into student comprehension, participation, and progression throughout a course. In administrative contexts, Top Hat supports curriculum development by offering **customizable textbook content, OER integration, and performance dashboards**. Instructors can deliver synchronous or asynchronous content, assign homework, and analyze student interactions in real time. Administrators use Top Hat data to inform pedagogical strategies, identify course bottlenecks, and support learning outcomes assessments. AI-generated recommendations help optimize quiz difficulty and content pacing. The platform's flexibility supports flipped classrooms, hybrid formats, and formative feedback strategies. It integrates with LMS systems and provides FERPA-compliant data handling. Especially effective in large or blended classes, Top Hat fosters engagement and accountability while generating learning data that can inform institutional planning and accreditation reporting.

10. Respondus

Respondus provides a **suite of AI-assisted tools for online test security, including LockDown Browser and Respondus Monitor**. LockDown Browser restricts students from accessing other applications, websites, or copy/paste functionality during exams, while Respondus Monitor uses AI-driven video proctoring to detect suspicious behavior such as eye movement, multiple faces, or background noise. These (controversial) features help uphold academic integrity during remote assessments and are **widely integrated with LMS platforms like Canvas, Blackboard, and Moodle**. Faculty can

customize test settings, review AI-generated incident reports, and make informed decisions about potential misconduct. Respondus also includes tools for publishing exams directly to LMSs and converting test documents into online formats. For administrators managing large-scale online assessments, Respondus provides peace of mind through scalable, automated exam security. Its broad adoption across higher education makes it a trusted partner in maintaining standards in virtual learning environments, particularly during **high-stakes testing or certification programs**.

11. [Studiosity](#)

Studiosity is an online study support service partnered with educational institutions to provide students with 24/7 access to help. Focused mainly on teaching and pedagogical support, it connects students with qualified subject specialists and AI tools for real-time live chat sessions covering subjects like math, writing, and science. Additionally, it provides constructive, formative feedback on written assignments, often within 24 hours. The service is founded on building student confidence and skills, promoting academic integrity by focusing on “help, not answers,” and complementing existing institutional support.

12. [Kira Talent](#)

Kira Talent is **an AI-powered admissions and interview platform** that helps universities evaluate applicants through asynchronous video and written assessments. It allows admissions teams to design customized interview experiences with timed questions, automated video recording, and rubric-based evaluation. AI assists by analyzing applicant responses for content quality, communication skills, and behavioral indicators, which can then be reviewed by human assessors. **Kira Talent is widely used in graduate, professional, and international admissions** where holistic review and applicant insights are crucial. The platform supports structured evaluation processes, improves reviewer calibration, and reduces implicit bias through standardized scoring. Universities benefit from time savings, improved candidate experience, and integration with CRMs or application systems. Kira also helps identify applicants who demonstrate institutional fit, resilience, and critical thinking — especially valuable for programs with competitive entry or mission-based selection criteria. As admissions become more data-informed and personalized, Kira Talent enables scalable yet humanized evaluation of prospective students.

13. [Brightspace \(D2L\)](#)

Brightspace, **developed by D2L, is a comprehensive LMS that integrates AI-driven tools** to personalize learning and provide actionable insights for educators and administrators. Its **learning analytics engine** tracks student engagement, completions rates, and performance trends, helping instructors identify students at risk and adapt teaching strategies. Administrators use aggregated data to monitor program effectiveness, course quality, and institutional goals. Brightspace also offers **AI-generated feedback, quiz question recommendations, and adaptive learning paths that support differentiated instruction**. The platform’s accessibility features and multilingual support promote inclusion, while built-in ePortfolio and competency-based tools enhance learner tracking. For university administration, **Brightspace provides dashboards for accreditation**, student success initiatives, and strategic reporting. It supports a wide range of modalities including **fully online, hybrid, and flipped learning environments**. Integration with external tools, robust security, and scalability make Brightspace suitable for large institutions. Its user-friendly design and AI-powered functionality position it as a modern LMS for evolving educational demands.

14. [ExamSoft](#)

ExamSoft is a **secure, offline exam platform** that combines **AI-powered assessment analytics** with robust test delivery, **especially in professional schools like law, medicine, and nursing**. It allows students to take exams on locked-down devices without internet access, reducing cheating opportunities. AI tools analyze exam performance across multiple dimensions: question difficulty, learning outcomes, and individual student trends. Faculty and administrators receive detailed reports identifying knowledge gaps, curriculum alignment issues, and cohort-wide performance metrics. These insights support curricular improvement and accreditation documentation. ExamSoft also supports tagging questions to learning objectives, providing real-time data on program outcomes. The platform integrates with LMSs and SISs and is compliant with accessibility and privacy standards. Institutions often use it for high-stakes assessments like midterms, finals, or board exam simulations. By pairing secure delivery with granular analytics, ExamSoft ensures academic rigor and continuous improvement, making it a **cornerstone of assessment strategy in health sciences and professional education programs**.

15. [ALEKS \(McGraw Hill\)](#)

ALEKS (Assessment and Learning in Knowledge Spaces) is an **adaptive learning platform powered by AI, designed to personalize math and science education based on students' readiness and mastery**. ALEKS begins with a diagnostic assessment and builds an **individualized learning path, continuously adjusting as students progress**. Universities use ALEKS for placement testing, remedial education, and foundational courses in **disciplines like algebra, chemistry, and statistics**. Administrative dashboards provide insights into student preparedness, topic mastery, and time-on-task, i.e., data used to inform curriculum planning and support services. ALEKS improves retention by allowing students to progress at their own pace while ensuring prerequisite knowledge is solid. Faculty appreciate its automatic grading, intervention alerts, and integration with LMS platforms. The system's data-rich reports help institutions target academic support more precisely and assess learning outcomes longitudinally. By blending adaptive AI with curricular rigor, ALEKS enhances equity in STEM pathways and supports institutional goals around access, persistence, and student success.

16. [Moodle \(with AI Plugins\)](#)

Moodle is a widely adopted **open-source learning management system** used across universities for managing courses, grading, and content delivery. **While Moodle itself doesn't have native AI features, its open architecture allows for integration with AI-powered plugins and third-party tools. Popular AI integrations include** automated grading assistants, plagiarism checkers, adaptive learning modules, and **chatbots for student support**. Administrators use AI-enhanced analytics dashboards to track engagement, identify at-risk learners, and support accreditation reporting. Moodle's modular nature also allows institutions to customize AI features for specific academic programs or institutional goals. Faculty can automate feedback, personalize content delivery, and streamline assessment processes. For administrative staff, AI-enabled Moodle environments can improve curriculum planning and course performance tracking. Its global community regularly contributes new AI-compatible features, making Moodle a flexible foundation for innovative teaching and administration. **Institutions seeking low-cost, customizable LMS solutions often choose Moodle for its scalability, open standards, and compatibility with AI-enhanced digital learning ecosystems.**

[17. n8n](#)

n8n is an **open-source workflow automation tool that enables universities to streamline administrative operations by connecting various applications without writing code**. It acts as an orchestration layer, automating repetitive tasks such as sending emails, updating spreadsheets, managing forms, and **syncing data across platforms** like Google Workspace, Microsoft 365, Slack, and internal CRMs or SISs. **AI-powered integrations, including language processing and chatbots**, can be layered into n8n to trigger workflows based on user inputs or system events. For example, when a student submits a form, n8n can automatically generate an acknowledgment email, update a database, and notify the appropriate advisor. **In university administration, n8n is useful for enrollment tracking, faculty onboarding, IT ticketing, and data consolidation**. Its visual editor allows non-technical staff to build complex automations. By reducing manual workflows and enabling smarter data flows, n8n helps institutions improve efficiency, data accuracy, and responsiveness, while also freeing staff for higher-value strategic tasks.

[18. Fathom](#)

Fathom is an **AI-powered meeting assistant** designed to record, transcribe, and summarize **video meetings**. Universities use Fathom to support administrative coordination across departments, academic governance, and strategic planning. **Integrated with Zoom, Google Meet, and Microsoft Teams, Fathom automatically captures meetings, highlights key topics, and generates actionable summaries with timestamps and speaker attribution**. Its AI can identify tasks, decisions, and follow-ups, helping teams stay aligned **without relying on manual notetaking**. **Administrators use Fathom to document faculty senate discussions, curriculum committee meetings, and hiring panels**. The transcripts are searchable, shareable, and exportable to project management tools or email. Fathom supports accessibility by providing accurate transcripts for participants with hearing impairments. It also boosts productivity by saving hours of post-meeting documentation time. **With strong privacy and compliance features, Fathom is well-suited to higher education environments where secure information exchange and institutional memory are critical**. It improves meeting outcomes and enhances collaboration across busy university teams.

[19. Nyota](#)

Nyota is an **AI-driven meeting intelligence platform tailored to improve communication and accountability in institutional meetings**. Like Fathom, Nyota records, transcribes, and summarizes discussions, but it emphasizes semantic understanding: tagging meeting themes such as budgeting, policy, or student success. It tracks who spoke, when, and what was said, allowing administrators to search across multiple meetings and identify trends or recurring issues. **Nyota is particularly valuable for university executive teams, academic planning groups, and cross-functional task forces**. Its dashboards help leadership identify follow-through on action items, document institutional decisions, and align departmental objectives. AI-generated summaries and insights reduce manual reporting and increase transparency. **Nyota's secure storage and compliance framework ensure suitability for FERPA and data-sensitive discussions**. Used strategically, Nyota helps build organizational memory, surface priorities, and facilitate institutional learning over time. **For busy administrative leaders and governance bodies, it turns meetings from transient conversations into actionable, trackable data**.

[20. Notion AI](#)

Notion AI brings **generative AI functionality** into Notion's all-in-one workspace platform, making it a powerful tool for university administration. **With Notion, staff can manage documents, tasks, calendars, policies, and databases in a single interface.** Notion AI adds natural-language search, automatic summarization, content generation, and grammar checking to this ecosystem. **Administrators use it to draft strategic plans, generate meeting notes, outline reports, and organize operational workflows. Departmental teams collaborate on shared pages while AI helps condense large documents or suggest action items from meeting minutes.** Notion's flexibility means it can serve as an internal wiki, project tracker, or knowledge base, with AI improving usability and efficiency. **For example, HR teams can use it to maintain up-to-date onboarding guides, while academic units track program reviews or course development.** Notion AI helps reduce cognitive load by automating routine documentation and enhancing information retrieval, making it a valuable productivity platform in complex academic organizations.

[21. Guru](#)

Guru is an **AI-powered knowledge management tool that captures and surfaces institutional knowledge at the point of need. It integrates with platforms like Slack, Microsoft Teams, and Google Workspace, enabling administrative teams to access accurate, vetted answers in real time. Universities use Guru to centralize operational procedures, HR policies, IT protocols, and student service workflows.** Its AI continuously updates and verifies content, alerting users when information may be outdated or incomplete. Guru also includes browser extensions, allowing staff to retrieve context-relevant information while working across systems. For **onboarding** new employees or **maintaining institutional continuity** during leadership transitions, Guru reduces the learning curve and improves consistency. Its analytics dashboard shows which knowledge cards are most accessed, helping identify areas for process improvement. As higher education institutions strive to streamline internal communications and retain tacit knowledge, Guru serves as a smart, searchable "source of truth" that enhances collaboration and decision-making across administrative units.

[22. Gamma](#)

Gamma is an **AI-driven presentation and document creation tool designed to help users turn ideas, outlines, or datasets into visually compelling slide decks or reports. It automates formatting, layout, and visual design, allowing university administrators to quickly build stakeholder updates, budget presentations, strategic reports, or policy briefs.** Users input rough notes or prompts, and Gamma generates a coherent, professional-quality presentation complete with design elements and charts. This is particularly **valuable during time-sensitive planning cycles or committee reporting.** The tool supports collaborative editing and integrates with data sources for dynamic updates. Its AI assistant can refine tone, summarize long content, and restructure slides for clarity. Unlike traditional presentation software, Gamma reduces the time spent on formatting and helps users focus on content strategy and communication effectiveness. **In academic administration, where storytelling with data is key, Gamma empowers teams to deliver clear, compelling messages to faculty councils, senior leadership, and external stakeholders.**

[23. Reclaim](#)

Reclaim is an **AI-powered calendar and time management assistant designed to optimize scheduling and productivity.** For university administrators managing packed

calendars, it automatically blocks focus time, balances recurring tasks, and finds meeting slots that align with team preferences. **Reclaim integrates with Google Calendar and Microsoft Outlook**, syncing to-do lists and meetings across multiple platforms. It uses AI to prioritize tasks based on urgency and deadlines, rescheduling low-priority events when conflicts arise. Administrative teams use Reclaim to coordinate across departments, plan standing meetings, and protect time for deep work. The system also supports “smart habits,” like weekly planning, writing hours, or student advising, reinforcing productive routines. With analytics on time usage and scheduling conflicts, Reclaim offers insights to **help reduce burnout and improve calendar equity. For higher education professionals juggling governance, teaching, and leadership responsibilities**, Reclaim simplifies coordination and supports time-aware decision-making across complex university operations.

24. Clockwise

Clockwise is another **AI-based calendar optimization tool tailored for collaborative environments**. It goes beyond individual productivity to align availability across entire teams or departments. Used in university administration, Clockwise helps coordinate large committees, project teams, or recurring governance meetings by automatically suggesting ideal meeting times based on focus availability, working hours, and preferences. It protects time blocks for focused work while managing calendar conflicts dynamically. **Clockwise integrates with Google Calendar and Slack**, offering real-time updates and scheduling suggestions. For academic units juggling tight schedules, it can reduce scheduling friction and improve meeting efficiency. Administrators can view team-wide analytics to assess meeting load, fragmentation of focus time, and potential burnout risks. When deployed institution-wide, Clockwise fosters healthier scheduling habits and improved work-life balance. Combined with tools like Reclaim, it forms part of a modern AI-driven time management stack that supports collaboration, clarity, and efficiency in busy academic environments.

25. HubSpot AI Writer

HubSpot’s AI Writer **enhances the CRM’s existing marketing, admissions, and communication tools by generating emails, web copy, event announcements, and student outreach materials**. Universities use HubSpot to **manage prospective student funnels, donor relations, alumni communications, and event campaigns**. The **AI Writer accelerates content creation, ensuring brand-aligned messaging with appropriate tone and structure**. It can generate first drafts, repurpose content across platforms, and optimize messages for engagement. For example, **admissions teams can personalize recruitment emails at scale, while advancement offices automate follow-ups after events**. HubSpot AI supports A/B testing, analytics, and segmentation, allowing communication to be both efficient and targeted. It integrates seamlessly with marketing workflows and contact databases. **For university communications and advancement offices under pressure to produce high volumes of tailored content, HubSpot’s AI Writer offers time savings, message consistency, and data-informed optimization**, making it a vital tool in modern institutional engagement strategies.

Top 25 AI Tools for University Research & Teaching

1. [Deep Research \(ChatGPT\)](#)

Deep Research is a specialized capability within ChatGPT (Pro version) that streamlines academic literature reviews by browsing, summarizing, and analyzing online sources. Researchers can input a query or hypothesis, and Deep Research returns a synthesized overview, linking to reputable academic articles, datasets, or technical sources. It is particularly useful for scanning a field, identifying gaps, or preparing grant proposals. Unlike static search engines, Deep Research engages in iterative dialogue, allowing users to refine questions and compare perspectives dynamically. It can **generate annotated bibliographies, structured outlines, and simplified explanations of complex topics.** While it cannot replace peer-reviewed vetting, it significantly accelerates the initial phase of scholarship. **Faculty use it to prep lectures, while graduate students rely on it for thesis research and concept clarification. As institutions encourage responsible AI use, Deep Research offers a low-friction, high-reward entry point into AI-supported scholarship that complements traditional academic research workflows.**

2. [NotebookLM \(Google\)](#)

NotebookLM is an experimental Google tool that uses large language models to analyze and synthesize user-uploaded content (notes, PDFs, articles) into summaries, FAQs, and flashcards. It allows students and researchers to upload documents and ask questions in natural language, with responses grounded in the original materials. **It is particularly effective for studying complex academic texts or preparing for comprehensive exams.** NotebookLM helps users identify main ideas, paraphrase technical content, and organize their study materials more efficiently. Faculty can use it to summarize research readings for class or generate lecture notes from dense articles. The AI's contextual awareness ensures responses are relevant to uploaded content, rather than generic web knowledge. Although still in development, NotebookLM **represents the future of personalized, document-aware learning companions.** It supports multimodal input and is **particularly valuable in literature-heavy fields such as law, history, and the humanities,** where organizing and retaining dense material is a persistent academic challenge.

3. [Perplexity](#)

Perplexity AI is a conversational search engine that combines the power of generative AI with real-time web data. Unlike traditional search engines, it provides concise, cited answers to complex queries, complete with source transparency. This makes it especially useful for academic research, where citation integrity and information traceability are critical. Perplexity handles both general and scholarly queries, returning results from scientific journals, institutional repositories, and high-quality media sources. **Faculty use it to stay current in their fields, identify recent publications, or gather comparative perspectives.** Students benefit from its ability to summarize dense topics and recommend follow-up questions. The *Pro* version adds access to larger models and document uploads. **For literature reviews, policy analysis, or briefing preparation, Perplexity offers an efficient, trustworthy alternative to Google or ChatGPT alone. Its clean interface, citation awareness, and academic applicability have made it increasingly popular among higher education professionals seeking fast but verifiable insights.**

[4. Elicit](#)

Elicit is a **research assistant built by Ought, designed specifically to support evidence synthesis and literature reviews**. Using natural language queries, users can ask Elicit to **identify relevant academic papers, extract key variables, compare methodologies, and summarize findings across studies**. It shines in disciplines where structured comparisons such as meta-analyses or systematic reviews are required. **For example, faculty in psychology, education, or public health use Elicit to track outcome variables, intervention designs, and sample characteristics across dozens of studies. Unlike general AI tools, Elicit is tuned to scholarly workflows: it retrieves metadata, abstracts, and findings from academic databases and organizes them in tabular formats for analysis. Graduate students use it for thesis development, topic mapping, and methodology selection.** While not a full substitute for expert review, Elicit dramatically accelerates the initial stages of research synthesis and helps structure complex academic arguments. It is a powerful AI partner for evidence-based disciplines that rely on comparative scholarship.

[5. Research Rabbit](#)

Research Rabbit is a **dynamic research discovery and visualization tool designed to help scholars explore citation networks, co-authorships, and academic fields visually**. Instead of static lists, it presents related research as an interactive graph, allowing users to follow citation paths and **uncover influential or emerging papers**. It **complements databases like PubMed and Google Scholar** by showing relationships between works: who cites whom, how research clusters develop, and where intellectual gaps lie. Faculty and students use it to find collaborators, map literature for grant applications, or trace the historical evolution of a theory. Its collaborative features let users share research collections and notes in real time. Research Rabbit is particularly valuable in interdisciplinary studies where keyword searches may miss conceptual connections. By turning bibliographic data into an exploratory tool, it enhances both teaching (e.g., literature mapping exercises) and research design. **It is a favorite among early-career researchers seeking inspiration or a more intuitive path through scholarly literature.**

[6. Scite.ai](#)

Scite.ai is an AI-powered **citation analysis platform that helps researchers assess the reliability and context of academic claims**. Unlike traditional citation counts, **Scite classifies each citation as supporting, contrasting, or mentioning the cited work, offering a deeper understanding of scholarly influence. This helps researchers evaluate whether a paper's claims are broadly accepted or contested in the field.** Faculty and students use Scite to vet sources, validate arguments, and identify key publications with positive peer engagement. It also includes *Smart Citations*, which allow users to see in-text citation excerpts in real time. Institutions can **integrate Scite into library services to enhance literature evaluation skills**. Its browser extension enables quick contextual citation checks while reading online papers. **Scite is particularly useful in literature reviews, journal clubs, and research methods courses**, where critical source appraisal is key. It promotes evidence-based scholarship and reduces reliance on reputation or raw citation counts alone.

[7. ChatPDF](#)

ChatPDF is a user-friendly AI tool that allows users to **upload PDFs (e.g., research articles, textbooks, reports) and engage in interactive Q&A with the content**. It uses natural language processing to parse complex documents and generate responses based solely on their contents. Researchers and students use ChatPDF to clarify arguments,

summarize sections, or extract figures and tables from dense academic texts. **It is especially useful for quickly understanding unfamiliar papers, checking definitions, or reviewing background literature. Faculty may use it to generate discussion questions or convert journal articles into study aids.** The tool supports **multilingual documents** and is widely used in international classrooms and research teams. ChatPDF helps overcome barriers posed by jargon, length, or unfamiliar formatting. It complements citation tools like Zotero by improving document comprehension rather than just organization. As part of research or teaching workflow, ChatPDF saves time and makes scholarly documents more accessible and interactive.

8. [Scopus](#) (with AI Features)

Scopus is a **comprehensive research database and citation indexing service by Elsevier, offering access to millions of peer-reviewed articles across disciplines.** Recent updates have added AI-powered analytics for trend detection, author mapping, and research impact measurement. Institutions use Scopus to track faculty publications, benchmark against peer institutions, and identify emerging fields. The AI-enhanced features allow users to **visualize topic clusters, forecast research trajectories, and understand collaboration networks at scale.** Researchers benefit from **suggested readings**, related authors, and co-citation analysis that speeds up literature discovery. **Scopus is also used in grant development and institutional reporting, offering exportable metrics for CVs, impact narratives, and departmental reviews. Academic libraries often pair it with tools like SciVal or ORCID for strategic planning and visibility tracking.** While access requires subscription, its authoritative indexing and AI-enhanced analytics make Scopus a valuable resource for both individual scholarship and institutional research management.

9. [Julius AI](#)

Julius is a **research assistant platform designed to help scholars with data analysis, literature synthesis, and writing support.** Its standout feature is the ability to combine AI-generated insights with statistical computations, making it **especially helpful in the social sciences, business, and health research.** Julius can summarize academic articles, compare methodologies, and **assist in hypothesis development. It also supports statistical modeling, data visualization, and table generation using uploaded datasets.** Researchers can interact with Julius via natural language, simplifying complex tasks like interpreting regression outputs or preparing reports. It **integrates with academic databases and citation managers** to streamline workflows from discovery to publication. Julius is **particularly useful for graduate students and faculty juggling multiple projects**, offering structure and clarity during the research process. While it doesn't replace human expertise in data interpretation, it accelerates tasks and enhances productivity in academic environments where time and clarity are often at a premium.

10. [Paperpile](#) / [PaperPilot](#)

[Paperpile](#) is a **reference management tool designed for academic writing**, while **[PaperPilot](#)** (a related or emerging companion tool) **focuses on collaborative research boards and document annotation.** Together, they **streamline the research workflow from literature collection to paper drafting. Paperpile integrates with Google Docs** and supports automatic citation formatting in thousands of styles, making it easy for teams to co-write papers and theses. Its browser extension allows one-click **import of articles from databases like PubMed, arXiv, or Google Scholar. PaperPilot adds visual boards for organizing readings, taking notes, and tracking themes across research projects — helpful in early-stage idea development or collaborative**

grant writing. Faculty and students can annotate PDFs, tag concepts, and generate shared summaries. These tools reduce the friction of managing sources and help researchers focus on synthesis and argumentation. Particularly useful in labs, writing-intensive courses, and graduate programs, Paperpile and PaperPilot support transparent, well-organized academic workflows.

11. [ChatGPT Edu \(OpenAI\)](#)

ChatGPT Edu is OpenAI's version of ChatGPT tailored for higher education, offering institution-wide access with enhanced security, FERPA compliance, and higher context limits. Designed for students, faculty, and staff, it enables document analysis, code interpretation, data visualization, and custom GPT creation. ChatGPT Edu supports deep research, academic writing, lesson planning, and administrative tasks through an AI assistant accessible across departments. Students can use it for drafting essays, studying, or understanding complex readings, while faculty use it to generate course materials, design assessments, and summarize research. It supports multimodal inputs (text, files, images) and includes tools like DALL-E, Python-based analysis, and collaborative workspace creation. Unlike the public version, ChatGPT Edu offers a campus-wide, policy-aligned AI experience that universities can centrally manage. It empowers institutions to scale AI adoption while maintaining oversight, making it one of the most comprehensive and secure AI solutions available for academia today.

12. [Claude for Education \(Anthropic\)](#)

Claude, developed by Anthropic, is a **conversational AI model grounded in ethical and safety-aligned development. In academic settings, Claude is prized for its Socratic questioning style, which encourages students to think critically rather than simply receive answers. It is used as a teaching assistant for classroom discussions, writing support, and reading comprehension. Claude can analyze large documents (with a context window of up to 200K tokens in Claude 3 Opus), making it ideal for reviewing entire books, policy reports, or legal documents. Faculty use Claude to co-develop case studies, simulate debates, or generate assessment questions aligned with learning outcomes. Its reflective tone and ability to handle complex reasoning make it particularly suitable for philosophy, humanities, law, and ethics courses. Because of its alignment and thoughtful responses, it is also used in academic integrity contexts where students are encouraged to explore perspectives rather than receive definitive answers. Claude offers a nuanced, conversation-rich approach to AI in education.**

13. [Google Scholar \(with AI Features\)](#)

Google Scholar remains a **foundational tool for academic research, offering free access to a vast index of scholarly articles, theses, books, and conference papers. Recently, it has begun integrating AI features such as Scholar Profiles, related article suggestions, and citation graphing, to help researchers identify influential works and track developments in their field. The platform's AI curates recommendations based on past searches and citations, offering users a personalized research experience. It's widely used by students and faculty for literature reviews, reference tracking, and publication visibility. Scholar's integration with tools like Zotero, EndNote, and ORCID supports citation management and academic networking. Administrators also use citation metrics from Google Scholar to assess faculty impact and benchmark research performance. Though it lacks the refinement of commercial databases like Scopus or Web of Science, its open access and growing AI enhancements make Google Scholar an essential discovery tool in both teaching and research.**

14. [GitHub Copilot](#)

GitHub Copilot is an **AI coding assistant developed by GitHub and OpenAI that supports researchers and instructors in programming tasks. It provides code suggestions, autocompletion, and real-time debugging within IDEs like Visual Studio Code, streamlining the development of scripts, simulations, data analyses, and digital experiments.** Faculty use Copilot to **support computational assignments, prototype research software, and assist students in computer science or data-heavy fields.** In research labs, Copilot speeds up exploratory coding, enabling researchers to focus on problem-solving rather than syntax. It supports languages like **Python, R, JavaScript, and MATLAB, making it adaptable across STEM disciplines.** For teaching, **Copilot helps generate boilerplate code, automate grading scripts, and personalize exercises.** It encourages coding literacy among students while improving productivity for experienced developers. Though best used with human oversight, GitHub Copilot has quickly become a valuable tool in academic programming environments, bridging the gap between novice learners and professional-grade coding workflows.

15. [Fathom \(Education Use\)](#)

In addition to administrative use, **Fathom is gaining traction in academic contexts as a lecture and seminar recording assistant. Its AI capabilities allow for live or recorded transcription, automatic summarization, and extraction of key insights from class discussions or lab meetings.** Faculty use Fathom to capture and share lecture content, generate discussion highlights, and create searchable archives for asynchronous learners. Students benefit from accurate transcripts that enhance note-taking and comprehension, especially those with **accessibility needs.** Fathom **integrates with Zoom, Google Meet, and Microsoft Teams,** providing cross-platform consistency for hybrid or fully online classrooms. It also aids in academic research by documenting interviews, focus groups, or collaborative brainstorming sessions. The tool helps faculty and graduate students preserve valuable spoken content and convert it into reusable instructional or research resources. **As AI tools become embedded in academic practice, Fathom stands out for improving access, retention, and instructional quality in both live and asynchronous learning environments.**

16. [Otter.ai \(Academic Use\)](#)

Otter.ai is an **AI-powered transcription and note-taking tool widely used in academia for lectures, seminars, meetings, and interviews. It converts speech into accurate, timestamped transcripts in real time, with speaker identification and keyword indexing.** Faculty use Otter to record and annotate lectures, making content more accessible and **supporting universal design for learning (UDL).** Students benefit from searchable notes and automatic summaries, which enhance study efficiency and support learners with auditory or processing challenges. In research settings, Otter is used to transcribe interviews, focus groups, or oral histories, saving hours of manual transcription work. It **integrates with Zoom, Teams, and Google Meet,** supporting both live and recorded audio. Transcripts can be edited, exported, and shared across platforms. Its collaborative features allow for team-based annotation or peer review. For institutions prioritizing accessibility, productivity, and knowledge retention, Otter.ai is a cost-effective, user-friendly solution that enhances both instruction and research documentation.

17. [Grammarly](#)

Grammarly is an AI-driven **writing assistant that supports students, faculty, and researchers in producing clear, polished academic writing. It provides real-time grammar correction, clarity suggestions, tone adjustments, and plagiarism**

detection. In research, Grammarly is used to refine manuscripts, grant proposals, and academic correspondence. It helps non-native English speakers improve fluency and confidence in scholarly communication. In teaching, faculty integrate Grammarly into writing-intensive courses to provide students with formative feedback before submission. Premium features include genre-specific suggestions and citation formatting assistance. Grammarly can be used as a **standalone platform or integrated into Microsoft Word, Google Docs, and web browsers**. Institutional licenses offer dashboards for tracking writing improvement over time, making it useful for writing centers and academic support units. While it doesn't replace human editing for publication-ready work, Grammarly accelerates the revision process, builds writing skills, and supports academic integrity, particularly in programs where clear written communication is a key learning outcome.

18. Writefull

Writefull is an AI-based **writing assistant specifically designed for academic and scientific writing**. Unlike general-purpose tools like Grammarly, Writefull is trained on academic corpora, making it especially effective at suggesting discipline-specific phrasing, improving sentence structure, and optimizing scholarly tone. It offers features like automatic abstract generation, journal-specific language checks, and citation editing for APA, MLA, and Chicago styles. **Researchers use Writefull to revise manuscripts, abstracts, and responses to reviewers**. It also provides language feedback tailored to target journals, helping improve acceptance rates. **Integrated with Microsoft Word and Overleaf (for LaTeX users)**, Writefull serves a wide range of academic disciplines, especially in engineering, life sciences, and social sciences. **Institutions with international student populations use it to support academic English development**. Writefull also provides tools for checking document consistency and grammar benchmarking across cohorts. By bridging the gap between raw content and publishable quality, Writefull enhances scholarly communication and supports institutional research output goals.

19. Bard (now Gemini) – Google

Formerly known as Bard, Gemini is Google's multimodal AI platform offering natural language generation, summarization, and code support. **In academic settings, Gemini is used for content synthesis, quick research overviews, and brainstorming**. It pulls from real-time web data, making it especially useful for identifying emerging trends or policy updates. **Faculty use Gemini to draft lecture content, summarize long readings, or prepare visual aids with code and data integration**. Students benefit from its ability to clarify complex topics, support literature searches, and aid in assignment planning. **Unlike more insular models, Gemini's real-time capabilities and Google integration make it dynamic and immediately useful for teaching and research preparation**. It pairs well with Google Docs, Scholar, and Classroom, fitting into digital teaching environments already using Google Workspace. As it evolves, Gemini is **expected to support deeper multimodal reasoning**, combining text, images, and even charts to provide richer academic assistance across disciplines.

20. Gamma AI (for Teaching and Presentations)

Gamma is an AI-powered **tool for creating engaging slide decks, reports, and educational presentations from notes, documents, or outlines**. Faculty use Gamma to transform lecture plans, research findings, or lesson content into clean, professional visuals with minimal effort. Its generative AI suggests layouts, refines text for clarity, and includes icons, charts, and images that support storytelling. **Gamma is especially helpful**

for instructors without graphic design skills who want to enhance the visual appeal and pedagogical impact of their presentations. Students also use Gamma for class projects, capstone presentations, and research posters. The platform **supports collaboration, integrates with Google Drive and Notion,** and enables sharing through links or exports. Compared to traditional presentation software, Gamma reduces time spent on formatting and helps educators focus on content delivery and learning objectives. It is gaining popularity in flipped classrooms and project-based learning environments where concise, clear visual communication is key.

21. Canva Magic Studio

Canva Magic Studio is an **AI-enhanced design suite that helps faculty, researchers, and students create professional-quality visuals (posters, presentations, infographics, social media content) without needing graphic design experience.** The *Magic* tools include text-to-image generation, AI-powered layout suggestions, one-click background removal, and automatic slide formatting. Faculty use Canva to design instructional visuals, lab diagrams, and conference posters, while students apply it to group projects, assignments, and portfolios. The AI assistant helps refine design tone, correct text, and even draft content blocks based on simple prompts. Canva's education platform supports class collaboration and institutional branding, making it **useful for marketing departments as well. It integrates with Google Drive, PowerPoint, and Teams,** streamlining file sharing across platforms. For teaching and research environments where visual communication is increasingly important, especially in interdisciplinary or public-facing scholarship, Canva Magic Studio lowers the barrier to high-quality design and supports creative expression in both digital and print formats.

22. Synthesia

Synthesia is an **AI video generation platform that allows users to create narrated, avatar-based videos from text inputs — ideal for producing lectures, explainer videos, orientation materials, and multilingual content.** Faculty and instructional designers use Synthesia to deliver flipped classroom videos, microlearning modules, and visual summaries of complex topics. It supports dozens of realistic avatars and voices, with support for 120+ languages, making it a powerful tool for internationalized or accessible instruction. Researchers use Synthesia to present findings to lay audiences or stakeholders who prefer video over text. University administrators also apply it to streamline communications, such as **onboarding or policy training.** The platform's drag-and-drop interface enables quick production without needing a recording studio or actors. With consistent branding and AI-enabled script editing, Synthesia reduces the cost and time required for video creation. It is particularly valuable for scaling content across large institutions, enhancing student engagement, and reaching broader audiences through modern, visual storytelling.

23. Notion AI (Academic Use)

Notion AI extends the core productivity platform Notion by adding writing assistance, summarization, translation, and brainstorming features — all integrated into shared documents and databases. **In university research and teaching, it is used to draft syllabi, summarize readings, generate study guides, and manage collaborative research notes.** Faculty appreciate its **ability to convert scattered notes into structured outlines,** while students use it to track assignments, prepare research papers, or document lab results. **Notion AI is particularly helpful for organizing projects, literature reviews, or class discussions over time.** It allows tagging, linking, and **integrating with tools like Slack or Google Calendar.** For research teams, it serves as

a centralized hub where AI assists with content drafting and knowledge organization. Its natural-language interface reduces friction in documenting or planning, while AI suggestions speed up decision-making and communication. In courses emphasizing digital literacy and collaborative knowledge-building, Notion AI doubles as both a learning and productivity tool.

24. Claude/ChatGPT for Coding and Simulation

Claude and **ChatGPT** are both effective tools for supporting coding, simulation, and computational modeling in research and instruction. They assist students with debugging, syntax corrections, and concept clarification across languages like Python, R, MATLAB, and JavaScript. Faculty use them to create custom data analysis workflows, generate sample code for classroom exercises, or simulate physical and statistical processes. These AI tools are especially helpful in **data-heavy disciplines like economics, engineering, bioinformatics, and physics**. By explaining code logic step-by-step, they support learning and reinforce problem-solving skills. In research, they accelerate prototype development, automate repetitive data-cleaning tasks, and even assist in writing code for custom software or lab instrumentation. **When integrated into course design, these tools reduce coding anxiety and expand access to computational literacy**. Though best used with expert oversight, Claude and ChatGPT significantly reduce time-to-insight in both instruction and innovation, enabling more efficient use of programming in academic contexts.

25. Claude or ChatGPT for Research Communication

Both **Claude** and **ChatGPT** are increasingly used to enhance research communication by drafting summaries, plain-language explanations, and public-facing articles based on academic work. Researchers use these tools to convert dense findings into lay summaries for grant proposals, policy briefs, or media releases. Faculty preparing for funding competitions use AI to polish abstracts, write biosketches, and tailor messaging to reviewers. Graduate students rely on them to structure dissertations, prepare conference presentations, or clarify their own thinking during writing. Claude's reflective tone and longer memory suit Socratic-style development of arguments, while ChatGPT excels at producing polished, succinct content quickly. When used ethically, these tools help scholars communicate more clearly, reduce cognitive load during revision, and align writing with audience expectations. **In science communication or knowledge mobilization offices, AI accelerates the production of materials that bridge the gap between academia and the public. Together, they support a culture of accessible, responsive, and impactful research dissemination.**

Appendix 2 - AI Usage at Brock University

This appendix provides a comprehensive summary of Artificial Intelligence (AI) usage across Brock University, based on internal reports from 14 faculties and administrative units. It outlines how AI is being used, who is leading these initiatives, and any supporting structures.

AVP Students Portfolio

- Use Cases: Assistive technology (e.g., Glean, Alscribe), ChatGPT for staff productivity, Canva AI for design, SwimGen in athletics.
- Leaders: No named leaders, but system-wide adoption across SWAC, SHS, BSR, SLS.
- Special Consideration: AI supports neurodivergent students and promotes accessibility.

Centre for Pedagogical Innovation (CPI)

- Use Cases: Rubric generation, assessment redesign, co-pilot agents, curriculum innovation.
- Leaders: Matt Clare, Natalie Currie-Patterson, Mario Guerrero, Neta Gordon.
- Structures: CPI AI in Teaching Working Group, IT Infrastructure Review Team, Provost's AI Advisory Group.

Co-op, Career & Experiential Education (CCEE)

- Use Cases: Resume building (VMock), mock interviews, workshop design, report writing, content generation.
- Leaders: Melissa Beamer, Kate Balint, Camille Rutherford and Kate Cassidy.
- Structures: CACEE AI Working Group (developing), AI in Goodman event, Humanities Chairs discussions.

Faculty of Applied Health Sciences (FAHS)

- Use Cases: Teaching aids, essay writing with AI, research synthesis, digital health interventions.
- Projects: AskEllyn (AI chatbot for breast cancer), NFRF digital health grant.
- Leaders: Sean Locke, Amina Silva.
- Collaborators: COSC faculty on interdisciplinary AI health grants.

Faculty of Mathematics and Science (FMS)

- Use Cases: Teaching, advanced research (e.g., biomedical data science, NLP), productivity tools (e.g., summarizing, proofreading), community engagement (outreach workshops).
- Tools: ChatGPT, CoPilot, Eduaide, PyTorch, TensorFlow, custom models.
- Leaders: Yifeng Li, Betty Ombuki-Berman, Barak Shoshany, Robson DeGrande.
- Structures: Provost's AI Advisory Group, BSc AI Program (under development) Committee, Brock's AI Research Centre (under development), NSERC CREATE team, outreach events.

Faculty of Social Sciences (FOSS)

- Use Cases: Integrating AI into courses (e.g., PSYC 1F90), AI literacy, academic integrity, research presentations.
- Leaders: Tanya Martini, Kate Cassidy, Michelle Chen, Karen Louise Smith.

- Structures: Political Science AI survey, faculty-level discussions, participation in AI Advisory Group.

Goodman School of Business

- Use Cases: Broad AI adoption by faculty, students, and staff for productivity and critical engagement.
- Leaders: Anteneh Ayanso, Ernest Biktimirov.
- Structures: Cross-faculty AI conversations; engagement with Provost's AI Advisory Group.

Indigenous Engagement

- Use Cases: ChatGPT, Perplexity, and grammarly for writing refinement.
- Users: 3 team members, no formal leadership or structures yet.

Information Technology Services

- Focus on data governance, assessment of AI tools (e.g. Copilot), use cases, computing infrastructure, support.

International Team

- Use Cases: Document summarization, communication enhancement, course mapping (PathwayAI), Power Automate for data processes.
- Users: Approx. 20 team members.
- Note: No named AI leader, but individual initiatives are emerging.

Library

- Use Cases: Metadata generation, LLMs for productivity, AI for systematic reviews (Covidence), custom chatbot development, Makerspace tools, licensing negotiations.
- Leaders: Library leadership team; connections to national leaders like Catherine Steeves and Mike Ridley.
- Structures (frameworks): OCUL AIML, CARL AI Working Group, CRKN policy reviews.

Library Systems & Technology

- Use Cases: AI for coding, summarizing, 3D modeling (Dream.ai, Meshy.ai), chatbot testing, analytics.
- Projects: Training models on local data; occupancy modeling via Wi-Fi data.

Professional and Continuing Studies (PCS)

- Use Cases: AI-supported marketing, learning design, ESL teaching, automation in administration.
- Leaders: Eldon Freisen (ESL-AI integration), Barb Mercer (LMS design).
- Structures: ESL Curriculum Committee, EdTech Community of Practice.

Provost and Vice President Academic

- Structures: Provost's AI Advisory Group (14 faculty with domain expertise); guidance on policy and ethics.

Vice Provost, Teaching and Learning

- Highlights: Coordination of AI efforts across CCEE, CPI, PCS.

Cross-Cutting Observations

The following themes and expertise of colleagues span across faculties. These lists may not be complete.

Theme	Description
Widespread Usage	AI is used across all faculties and major service units, often integrated into daily workflows.
Ethical Emphasis	Academic integrity, transparency, and human oversight are key concerns.
AI Literacy	Broad efforts in AI education for faculty, students, and staff (e.g., CPI workshops and guidelines, Learning Services programming).
Collaborative Infrastructure	Brock is connected to OCUL, CARL, CRKN, NSERC, and other national and provincial bodies with AI initiatives or activities.
Emerging Leaders	A distributed but growing network of faculty and staff across disciplines is spearheading AI integration.
Need for Strategy	Multiple units express desire for a formal, empowering institutional AI strategy.

Table A.2.1: Overview of cross-cutting observations.

Name	Role, Expertise	Unit/Faculty
Dr. Yifeng Li	CRC in Machine Learning	FMS
Dr. Betty Ombuki-Berman	Co-leader, AI Centre	FMS
Dr. Sean Locke	Health Behavior	FAHS
Dr. Camille Rutherford	AI Pedagogy	Education
Dr. Kate Cassidy	GenAI Workplace Research	FOSS
Dr. Karen Louise Smith	Policy, Digital Regulation	FOSS
Dr. Robson DeGrande	AI Model Implementation	FMS
Dr. Barak Shoshany	AI-enhanced Science Teaching	FMS
Eldon Freisen	AI in ESL Instruction	PCS
Matt Clare	AI in Teaching Lead	CPI
Dr. Rahul Kumar	Technology and Higher Education	Education
Dr. Mohammed Estaiteyeh	Digital Pedagogies, Technology Literacies	Education
Dr. Aaron Mauro	Natural Language Processing, Mis/Disinformation, Digital Media	FHUM
Dr. David Hutchinson	K-12 Education: History, Philosophy, Policy; Alternative Education, EdTech, Lead on BA AI	Education

Table A.2.2: Institutional leaders in AI.

Appendix 3 - Examples of Canadian Universities with AI Strategies, Policies, or Advisory Bodies

University of Alberta

The University of Alberta offers one of Canada's most comprehensive [AI strategies](#). It outlines six guiding principles: accountability, transparency, risk management, human-centered design, alignment with university values, and continuous improvement. It spans research, teaching, learning, and administration. Closely tied to [Amii](#) (Alberta Machine Intelligence Institute), the university is a national AI leader, leveraging research excellence and federal partnerships. The framework ensures AI tools are used ethically and effectively, fostering innovation while mitigating risks. Alberta aligns with federal and provincial standards and actively contributes to the Pan-Canadian AI Strategy through research and leadership.

University of Waterloo

The University of Waterloo approaches AI governance through a “guidance” model rather than a single, standalone policy. Its AI use is governed by pre-existing institutional policies on data protection, cybersecurity, risk management, and intellectual property. Waterloo provides official [AI Use Guidance](#), encouraging alignment with the Government of Canada's AI use principles. It houses the Waterloo Data and Artificial Intelligence Institute ([Waterloo.AI](#)), which supports interdisciplinary research and responsible AI development. This framework emphasizes decentralized governance, transparency, and compliance. While lacking a central AI policy, the university provides resources for faculty and administrators to responsibly explore AI's potential in both academic and administrative contexts.

University of British Columbia (UBC)

UBC has developed clear guidance on the use of generative AI through its dedicated AI Steering Committee and an accompanying [GenAI@UBC](#) portal. The strategy focuses on academic integrity, responsible innovation, and pedagogical transformation. It offers explicit advice for faculty, students, and administrators, emphasizing principles such as fairness, privacy, and critical engagement. UBC's guidelines are regularly updated and created through broad consultation. Rather than enforcing rigid rules, the university encourages dialogue around the opportunities and risks of generative AI, positioning itself as a national leader in balancing innovation with ethical practice. Its approach is grounded in transparency and academic freedom.

University of Ottawa

The University of Ottawa has articulated a dedicated [AI Strategy for IT and Operations](#), focusing on five pillars: alignment with university goals, AI governance, data ethics, infrastructure, and culture change. The institution also integrates AI in research planning, having published a [Future Directions in AI](#) report outlining priorities for 2030. It supports AI adoption across both academic and administrative spheres and works closely with its [AI+ Society Initiative](#). This dual strategy allows the university to position itself as a key AI innovator, especially in bilingual contexts. The university ensures AI implementation adheres to ethical standards and contributes to student and institutional success.

McMaster University

In March 2024, McMaster launched an AI Advisory Committee to guide policy development, ethical use, and education surrounding generative AI. The committee

oversees institutional responses to AI trends and supports teaching, learning, and research through curated guidelines. McMaster provides [GenAI guidelines](#) for research, operations and teaching, including educational resources for instructors, students, and staff on tools like ChatGPT and GitHub Copilot. The approach emphasizes trust, academic integrity, and equitable adoption. While still forming a formal AI policy, McMaster's phased, committee-driven model offers flexibility and responsiveness. It positions the university to adapt quickly to technological developments while embedding ethical and pedagogical reflection across its academic and administrative units.

Western University

Western University currently does not have a distinct AI policy. Instead, it applies existing frameworks, including academic integrity policies, conduct codes, and IT usage guidelines, to address generative AI and automation technologies. Western maintains an [open guidance site on AI](#), outlining best practices and ethical considerations for faculty, students, and researchers. The university encourages responsible experimentation and emphasizes the importance of transparent communication about AI usage in academic work. While Western has not institutionalized AI governance at the strategy level, its approach focuses on integrating AI literacy and ethical reflection into its broader educational framework without unnecessary policy duplication.

University of Toronto

In 2024, the University of Toronto launched a university-wide AI Task Force, spanning six focused working groups: teaching, research, student services, operations, HR, and IT. Their June 2025 report outlines multi-layered recommendations aimed at realizing U of T as a fully [AI-ready institution](#). These include establishing an *AI Kitchen*, i.e., a secure sandbox for experimentation, and creating an AI Adoption Table to oversee ethical deployment across campus. The Task Force strongly emphasizes a human-centered AI ethos: AI tools must augment, not replace, human capacities; foster learning, inclusivity, accessibility, and well-being; and reflect academic freedom and research integrity.

Built upon its world-leading research ecosystem, including the [Vector Institute](#) and Temerty Centre for AI and Medicine, the Task Force's governance framework bridges deep technical expertise with policy and pedagogy. The report also highlights U of T's commitment to building AI literacy among faculty, students, and staff, integrating AI awareness into professional development and curricula. Infrastructure recommendations stress robust data governance, privacy safeguards, and equitable access to computational resources. For student and health services, the Task Force proposes pilot projects that use AI to personalize academic advising and wellness interventions — always with human oversight and ethical safeguards.

This dual-track strategy, grounded in pioneering research and a human-centered design philosophy, positions U of T to lead in ethical AI innovation. The AI Task Force report can be found [here](#).

Toronto Metropolitan University (TMU)

TMU established a Generative Artificial Intelligence Leadership Task Force with four working groups to address the use and implementation of AI at the institution. The university is active on several fronts. It has launched a [Creative AI Hub](#) that could be a model for Brock University, and a six-year multidisciplinary, multi-sector training initiative on [Responsible AI](#). Its Center for Learning and Teaching provides significant resources concerning [Generative Artificial Intelligence in Learning and Teaching at TMU](#).

Appendix 4 - Examples of US Universities with AI Strategies and Initiatives

Arizona State University (ASU)

[ASU's AI vision](#) is driven by its **Principled Innovation Framework**, which guides AI integration across six strategic pillars: research, workforce development, student learning, governance, infrastructure, and community engagement. Central to this is the **Ethical AI Engine**, establishing vendor benchmarks and ethical guardrails for all AI initiatives. ASU is the **first university to partner with OpenAI**, offering [ChatGPT Edu](#) to faculty and staff; its president describes AI as “*an unbelievably intelligent tutor*”. Campus-wide, ASU fosters interdisciplinary AI engagement through communities of practice, engaging 55 faculty in college-spanning initiatives. Additionally, the **W.P. Carey School of Business** offers executive AI-strategy programs to prepare leaders. In short, ASU’s expansive ecosystem, combining policy, governance, pedagogy, and external partnerships, exemplifies its commitment to **ethically-led innovation at scale**.

University of South Florida (USF)

[USF](#) has instituted a **robust generative AI policy**, requiring instructor approval, mandated disclosure, and appropriate citation for AI usage. It provides faculty guidance for crafting course-specific AI policies tailored to learning objectives. The university recently launched a **free public micro-course on Generative AI**, attracting over 4,500 learners, alongside graduate certificates and specialized micro-courses for campus-wide AI literacy. USF’s new [Bellini College of AI, Cybersecurity, and Computing](#), funded by a \$40M gift, will open in fall 2025, prioritizing workforce training in secure and ethical AI contexts. With transparent governance, scalable education, and a flagship academic unit, USF is building a responsible AI ecosystem aligned with pedagogical integrity and workforce readiness.

Carnegie Mellon University (CMU)

[Carnegie Mellon University](#) is widely recognized as one of the global pioneers in artificial intelligence, having established the first AI research lab in the 1950s and remaining a leader in the field ever since. The university’s School of Computer Science is home to the world-renowned Machine Learning Department, Language Technologies Institute, and Robotics Institute, each of which has produced groundbreaking advances that shape modern AI applications. CMU researchers have been central to the development of machine learning algorithms, natural language processing, autonomous vehicles, and human-computer interaction, while also **integrating ethics and fairness into [AI education](#) and research**. For example, Carnegie Mellon has embedded training on responsible AI, including issues of bias and transparency, into its curriculum, preparing graduates to address the societal implications of emerging technologies. The university also collaborates extensively with industry and government on real-world AI challenges, from cybersecurity to healthcare, reinforcing its role as a hub of innovation. With its **interdisciplinary approach** that bridges computer science, engineering, business, and social sciences, CMU remains at the forefront of shaping AI’s future while ensuring its responsible deployment.