

# Future Universities in a Generative AI World

Navigating Disruption to Direction



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Association of Pacific Rim Universities (APRU)

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We thank our advisory group members, case studies contributors, workshop attendees and other participants listed together below:

Prof. Simon BATES <b>Academic Lead</b>	University of British Columbia
Prof. Danny LIU <b>Whitepaper Author</b>	The University of Sydney
Prof. Cecilia CHAN <b>Advisor</b>	The University of Hong Kong
Dr. Alexandros PAPASPYRIDIS <b>Advisor</b>	Nefos
Prof. Annamarie JAGOSE <b>Advisor</b>	The University of Sydney
Dr. José Escamilla <b>Advisor</b>	Tecnológico de Monterrey

Prof. Theodore Jun YOO	Yonsei University
Dr. Qin LIU	Nanjing University
Dr. Sean MCMINN	The Hong Kong University of Science and Technology
Dr. Catherine ZHOU	The Hong Kong University of Science and Technology
Prof. Andrew HORNER	The Hong Kong University of Science and Technology
Dr. Joon Nak CHOI	The Hong Kong University of Science and Technology
Prof. James Ka Lei WONG	The Hong Kong University of Science and Technology
Mr. Erwin HUANG	The Hong Kong University of Science and Technology
Ms. Hayley YIU	The Hong Kong University of Science and Technology
Dr. Melody CHUNG	The Hong Kong University of Science and Technology
Mr. Kalindu FERNANDO	The Hong Kong University of Science and Technology
Mr. Chris LAW	The Hong Kong University of Science and Technology
Prof. Irwin KING	The Chinese University of Hong Kong
Ms. June CHEUNG	The Chinese University of Hong Kong
Mr. Preston HARTWICK	The Chinese University of Hong Kong
Ms. Zita Wing Yan LAM	The Chinese University of Hong Kong
Prof. Wilson WONG	The Chinese University of Hong Kong
Dr. Leander MARQUEZ	University of the Philippines, Diliman
Dr. Rita RAMOS	University of the Philippines, Open University
Dr. Vladimer KOBAYASHI	University of the Philippines, Mindanao
Dr. Michelle BANAWAN	Asian Institute of Management
Prof. LEE Yew Kong	Universiti Malaya
Prof. LEE Ping Yein	Universiti Malaya
Mr. CHIA Chi Kuan	Universiti Malaya
Dr. LIM Fun Siong	Nanyang Technological University, Singapore
Ms. TEY Siow Fong Ann	Nanyang Technological University, Singapore
Dr. Angela FRATTAROLA	Nanyang Technological University, Singapore
Dr. Joanne CHIA	Nanyang Technological University, Singapore
Prof. Leonard NG Wei Tat	Nanyang Technological University, Singapore
Prof. Ina Conradi-Chavez	Nanyang Technological University, Singapore
Prof. Andrew PRAHL	Nanyang Technological University, Singapore
Dr. HO Shen Yong	Nanyang Technological University, Singapore
Dr. WANG Zhiguo George	National University of Singapore
Prof. SOO Yuen Jien	National University of Singapore
Dr. Irwansyah	Universitas Indonesia
Dr. Iwan Adhicandra	Bakrie University
Prof. Hassan KHOSRAVI	The University of Queensland
Dr. Joanne HINITT	The University of Sydney

Ms. Kria COLEMAN	The University of Sydney
Prof. Simon MCINTYRE	University of New South Wales, Sydney
Dr. Jake RENZELLA	University of New South Wales, Sydney
Dr. Andrea KOLB	The University of Auckland
Dr. Mohsen MOHAMMADZADEH	The University of Auckland
Dr. Annie Prud'homme-Généreux	The University of British Columbia
Prof. Marcia GRAVES	The University of British Columbia
Prof. Stephen AGUILAR	University of Southern California
Prof. Benjamin Breen	University of California, Santa Cruz
Prof. David FIELDS	Northeastern University
Dr. Nathaniel Taeho YU	James Madison University
Prof. Manuel TERÁN	Tecnológico de Monterrey
Ms. Carmen REYES	Tecnológico de Monterrey
Dr. Sabur BUTT	Tecnológico de Monterrey
Dr. Héctor G. CEBALLOS	Tecnológico de Monterrey
Mr. Irving HIDROGO	Tecnológico de Monterrey
Prof. Lionel BROSSI	Universidad de Chile
Prof. Sergio CELIS	Universidad de Chile
Prof. Michael Paul FANGUY	[previously with KAIST] The Education University of Hong Kong
Dr. Cornelius KALENZI	[previously with KAIST] TELLA
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# Executive Summary

The release of ChatGPT in November 2022 marked a watershed moment for higher education. Within weeks, educators worldwide scrambled to respond as students gained access to an AI system that could write essays, solve problems, and complete homework assignments with unprecedented sophistication. What began as immediate concerns about academic integrity soon revealed itself as something far more profound: a catalyst that would bring long-brewing challenges in higher education to a head.

This crisis of academic integrity emerged against a backdrop of mounting pressures already threatening the traditional university model. There is an increasingly widely held belief that university degrees are no longer the great investment they once were. The rapid pace of technological change means that knowledge gained during a degree program may become outdated faster than ever before. Employers are increasingly looking beyond academic credentials to assess capability, while alternative -- and often digital -- education providers are offering more flexible, targeted learning experiences at a fraction of the cost. Governments are increasingly asking questions about how much it makes financial sense to subsidize universities.

As educators and institutions grappled with these challenges, the capabilities of generative AI advanced at a startling pace. Over the course of the past year, improvement in AI has challenged many skeptics' contentions. Large language models not only regurgitated average responses, they suggested unexpected and novel approaches to problems. They showed the ability to reason through step-by-step chains of thought, displaying sophisticated problem-solving abilities. They mastered complex mathematical and coding tasks. Perhaps most significantly, their tendency toward "hallucination" -- generating false or misleading information -- declined dramatically.

These rapid advances force us to confront profound questions about the future of higher education:

- **What happens when high-quality, personalized learning experiences can be generated on demand?** While free educational content has long been available online, AI offers the possibility of taking 'passive content' and making it active – offering individualized instruction, feedback to students, and customized curriculum development at scale.
- **How does the role of expertise evolve when AI can provide sophisticated domain knowledge and guidance?** While AI cannot replace true human expertise, it can democratize

access to knowledge and support in ways that challenge traditional academic hierarchies. Large language models can already model expert ways of thinking about problems and provide step-by-step guidance to students in many domains.

- **What if the standard four-year university degree is no longer the best way to develop human potential?** As knowledge evolves more rapidly and careers become more fluid, the traditional model of front-loading education in early adulthood may need to give way to more flexible, lifelong learning approaches.

One thing has become clear: universities cannot stand still. The forces challenging the classical university model are many and strong. On its own, generative AI may have posed a significant but manageable challenge for universities. When combined with a broader set of pressures on higher education, it makes a more fundamental transformation necessary.

To address these challenges, the Association of Pacific Rim Universities (APRU), with support from Microsoft, launched an initiative to examine how generative AI is transforming higher education across the Asia-Pacific region. Through research, workshops, and collaborative design sessions, the initiative developed:

- An analysis of current AI applications in higher education, revealing both innovative use cases and critical implementation gaps
- Four distinct models for how universities might evolve in an generative AI future, ranging from research-focused collaboratories to networked learning consortia
- A practical framework (CRAFT) for responsible AI adoption, addressing the key elements of Culture, Rules, Access, Familiarity, and Trust that institutions must navigate
- Concrete prototypes and policy recommendations to help universities begin testing and implementing new approaches

Current AI adoption in universities often remains piecemeal and reactive. While pockets of innovation exist – from AI-powered research assistants to adaptive learning systems – many institutions struggle to move beyond isolated experiments to systematic integration. This challenge is compounded by varying levels of AI literacy among faculty, concerns about equity and access, and the need to balance innovation with academic integrity.

Looking ahead, this initiative identified four potential models for universities in an AI-enabled future:

1. **Research Collaboratories:** These institutions resolve the tension between teaching and research by making them the same activity. Students learn primarily through apprenticeship in cutting-edge research projects, with AI accelerating collaboration and discovery.
2. **Digital University Consortia:** Operating as nodes in a global network, these institutions share high-quality learning experiences while using AI to provide personalized support and guidance to students.
3. **Community Learning Universities:** These institutions emphasize human connection and character development, strategically incorporating AI while maintaining focus on face-to-face interaction and local impact.
4. **Entrenched Universities:** This model illustrates the risks of making only incremental adaptations to AI, potentially leading to declining relevance and financial sustainability.

To help universities navigate this transformation, we developed the CRAFT framework for responsible AI adoption:

- **Rules:** Establishing robust guidelines and policies that govern AI use while remaining flexible enough to adapt to rapid technological change
- **Access:** Ensuring equitable availability of AI tools and infrastructure across the institution
- **Familiarity:** Building understanding and comfort with AI among students, faculty, and staff
- **Trust:** Fostering confidence in AI systems while maintaining transparency and accountability
- **Culture:** Acknowledging and working with institutional and regional attitudes toward technology and education

The initiative culminates in two key recommendations for moving forward:

1. **Form collaborative clusters:** Universities should work together in focused groups to tackle common challenges, from assessment redesign to faculty development, rather than struggling in isolation.
2. **Elevate students as partners:** As the most active users of AI, students should be engaged as valuable allies in developing effective practices and building institutional AI literacy.

Generative AI is not just another technological disruption to be managed in higher education – it is an accelerant that makes addressing a broader set of challenges to the university model more urgent. Over the next decade, universities face a critical choice: adapt incrementally and risk irrelevance, or reimagine their role in developing human potential and creating knowledge. The institutions that



thrive will be those that build coherent new business models aligned with emerging realities: the democratization and changing nature of expertise, the evolving demands of work, shifting funding landscapes, and rising alternatives to traditional education. Success requires moving beyond theoretical discussions to practical experimentation - testing new approaches and learning from both successes and failures. The frameworks, models, and recommendations in this report provide a roadmap for universities to begin this essential journey of transformation.

# Chapter 1: The APRU Initiative on Generative AI in Education

## Why this initiative?

The rapid emergence of generative AI has created both unprecedented opportunities and profound challenges for higher education institutions across the Asia-Pacific region. While some universities have begun experimenting with AI applications in teaching, research, and administration, many are struggling to develop coherent institutional approaches that balance innovation with responsibility. The need for systematic guidance, shared learning, and collaborative solutions has never been more urgent.

To address this critical need, the Association of Pacific Rim Universities (APRU), with support from Microsoft, launched a comprehensive multi-phase initiative: "Generative AI in Education: Opportunities, Challenges, and Future Directions in Asia and the Pacific." This initiative brought together diverse stakeholders from across the region's leading universities to examine how generative AI is transforming higher education and to develop practical frameworks for institutional response.

The project aimed to move beyond the initial reaction to AI—focused largely on academic integrity concerns—toward a more comprehensive understanding of how universities can productively and responsibly integrate AI across their operations. Specifically, the initiative sought to:

1. Create a baseline understanding of current AI usage and best practices across APRU member institutions
2. Identify key opportunities and challenges presented by generative AI, with particular attention to issues of equity and inclusion
3. Develop practical approaches and tools to address institutional needs and knowledge gaps
4. Foster collaboration and knowledge-sharing across the region's universities

## Components

The initiative was structured around four major components that built upon each other:

**Phase 1: Desk Research (January-February 2024)** A comprehensive review of existing AI implementations in higher education, drawing from submitted case studies and academic literature to identify innovative use cases and emerging patterns.

**Phase 2: Sensemaking Workshop (March 2024)** Two online sessions that brought together participants to analyze concrete cases of AI implementation and identify common patterns and opportunities.

**Phase 3: Foresight Workshop (June 2024)** An in-person workshop where participants collaborated to develop visions of how universities might function in an AI-integrated world.

**Phase 4: Creative Sandbox Workshop (August 2024)** Online collaborative sessions where participants worked in teams to develop concrete prototype concepts that addressed specific needs within the envisioned futures.

## Participating Stakeholders

The initiative brought together a diverse group of participants from across the Asia-Pacific region, including:

- University administrators and academic leaders
- Faculty members and researchers
- Educational technologists and instructional designers
- Students
- Industry partners and technology experts

Participants represented institutions from 12 economies spanning the Pacific Rim, ranging from the United States, Canada, and Australia to China, Indonesia, and the Philippines. This breadth of representation included Hong Kong, Singapore, Japan, Mexico, Chile, and Malaysia, ensuring that perspectives from both established and emerging economies were incorporated. This diversity was

crucial for creating frameworks and recommendations that could be adapted across different institutional and cultural contexts.

## Methodology

The initiative was designed to build an understanding of current AI use in higher education and develop frameworks for future implementation. The research and workshop phases were conducted between January and August 2024, with each phase building upon the insights from previous ones. The desk research and subsequent workshops were facilitated by project partner Tandemic. The research culminated in a whitepaper (Chapter 5) authored by Dr. Danny Liu (Professor, University of Sydney) and Simon Bates (Vice Provost and Associate Vice-President, Teaching and Learning, University of British Columbia).

### Phase 1: Understanding Current Practice

The initial phase focused on understanding how generative AI was being used across APRU member institutions. We conducted a comprehensive desk review examining both academic literature (including peer-reviewed research articles and scholarly publications) and industry sources (such as institutional blogs, news articles, and implementation reports).

Simultaneously, we invited APRU member institutions to submit detailed case studies documenting their current AI implementations. These institutional submissions provided valuable firsthand accounts of both successful pilot projects and ongoing challenges in AI adoption. Here is the list of all 33 submissions we received:

<b>Case Study Author(s)</b>	<b>University</b>	<b>Topic</b>
Theodore Jun YOO	Yonsei University	Chat GPT in Korean language education for Americans
Leia Fidelis Gisela Castro-Margate	University of the Philippines, Baguio	Generative AI for writing courses
Simon MCINTYRE	University of New South Wales, Sydney	Data Insights for Student Learning and Support
Jake RENZELLA	University of New South Wales, Sydney	"DCC Help" function for learning C language programming

Benjamin BREEN	University of California, Santa Cruz	Using LLM to simulate interactive historical settings for history classes
LEE Yew Kong, LEE Ping Yein	Universiti Malaya	Enhancing Virtual Patients with Generative AI
Sergio CELIS	Universidad de Chile	Application of AI in Education (powered by GPT): An undergraduate engineering course
Joanne HINITT, Kria COLEMAN	The University of Sydney	Using AI to enhance learning and engagement in occupational therapy
Danny LIU	The University of Sydney	Cogniti: An AI that teachers can steer
Hassan KHOSRAVI	The University of Queensland	Elevating Learning Through Student-AI Co-creation of Educational Resources
Annie Prud'homme-Généreux	The University of British Columbia	Supporting Faculty in the Design of Assignments that Invite Learners to Use Generative AI
Marcia GRAVES	The University of British Columbia	Guide first year science students to use generative AI tools strategically and responsibly
Mohsen MOHAMMADZADEH	The University of Auckland	Redesign courses under the influence of AI
Andrea KOLB	The University of Auckland	Text-to-image generation for rapid ideation in chemical & materials engineering course
Sean MCMINN	The Hong Kong University of Science and Technology	AI Readiness and Co-Designer
Joon Nak CHOI Sean MCMINN	The Hong Kong University of Science and Technology	The course "AI Literacy & Critical Thinking: Survival Skills for a Changing World"
James Ka Lei WONG	The Hong Kong University of Science and Technology	Case Teaching and Learning in the Age of Generative AI
Andrew HORNER	The Hong Kong University of Science and Technology	Enable students to engage in the creative process regardless of prior musical knowledge
Erwin HUANG	The Hong Kong University of Science and Technology	Teaching and learning (T&L) module for AI-assisted design thinking
Irwin KING, June CHEUNG, Preston HARTWICK	The Chinese University of Hong Kong	Tellus: AI assessment platform
Wilson WONG	The Chinese University of Hong Kong	Chatgpt in a course on policy analysis and design thinking
Manuel TERÁN Carmen Reyes	Tecnológico de Monterrey	Tecgpt-portal – Our gateway to generative AI

Sabur BUTT	Tecnológico de Monterrey	Openai models for student evaluations of teaching (SET)
David FIELDS	Northeastern University	AI4Impact program/course help students develop innovative and measurable solutions
WANG Zhiguo George	National University of Singapore	AI model for student engagement evaluation
LIM Fun Siong TEY Siow Fong Ann	Nanyang Technological University, Singapore	A University-Led Strategy towards an Ecosystem of Responsible Generative AI Applications for Teaching and Learning
Angela FRATTAROLA Joanne CHIA	Nanyang Technological University, Singapore	Designing an App with Gen AI to Aid the Writing Process
Leonard NG Wei Tat	Nanyang Technological University, Singapore	Prof Leodar – An RAG Study Buddy in NTU, MSE
Andrew Prah	Nanyang Technological University, Singapore	AI in the Professions Relevant to Students
Ina Conradi-Chavez	Nanyang Technological University, Singapore	Courses on AI's transformative potential in arts
Michelle Banawan Jikyeong Kang	Asian Institute of Management	"Bidirectional Generative AI Enhanced Policies and Procedures Formalization" for university administration
Cornelius Kalenzi	KAIST	Generative AI for preliminary research and development

This research sought to answer two key questions:

1. How are university stakeholders implementing generative AI?
2. What different models, approaches, and tools are being employed?

Through this comprehensive review, we identified eight distinct categories of AI use cases in higher education:

- Tutors and guides
- Course development/material development
- Interactive exercises/teaching tools
- Visual tools
- Research assistants
- Assessments and feedback
- University governance

- Admissions

The resulting compilation of use cases served as foundational material for the subsequent workshops.

## **Phase 2: Future University Working Group Development**

### *Sensemaking Workshop (March 2024)*

The sensemaking phase brought academics together across two online sessions to collectively analyze and derive insights from AI implementations in higher education. The workshop was structured around case study presentations from academics who had directly implemented AI initiatives in their institutions. Each presenter shared their experience in detail, including their approach, challenges encountered, and lessons learned.

Following each presentation, participants engaged in structured Q&A sessions that helped surface nuances and implicit knowledge from these implementations. These discussions allowed for deeper exploration of specific aspects of each case, from practical implementation challenges to unexpected outcomes.

The workshop culminated in a synthesis exercise where participants articulated their key insights drawn from across the cases. This collective sensemaking process helped identify both common patterns in successful AI adoption and critical gaps that need to be addressed. The workshop brought together professors and administrators who were actively experimenting with AI in their teaching and research, enabling rich peer learning from concrete experiences rather than theoretical possibilities.

Key workshop objectives included:

- Identify common patterns and trends across case studies on the use of AI in universities that can inform effective strategies for adoption
- Recognize gaps and opportunities for additional AI applications in universities

### *Foresight Workshop (June 2024)*

The third component employed strategic foresight methodologies during a two-day in-person workshop at the Hong Kong University of Science and Technology (HKUST). The workshop brought

together academics, researchers, and students—including several participants from the earlier sensemaking workshop—to systematically explore possible futures for higher education in an AI-integrated world.

Using established foresight techniques, participants first examined current trends and signals of change in higher education, technology, and society. They then engaged in scenario development exercises, exploring how different combinations of critical uncertainties might shape the evolution of universities. This structured approach helped participants move beyond immediate operational concerns to consider more fundamental questions about how universities might need to transform in response to AI and other disruptions.

The diverse mix of participants—students alongside faculty and researchers—enriched the scenario-building process by bringing multiple perspectives on both present challenges and future possibilities. The workshop deliberately pushed participants to imagine futures beyond simple extrapolations of current trends, resulting in four distinct models for how universities might evolve.

Through this foresight process, participants:

- Explored emerging AI trends and their potential impact on various facets of higher education
- Co-created a range of plausible models that illuminate the diverse ways in which universities might function in an AI-integrated world
- Identified key opportunities and challenges associated with each scenario, prompting strategic discussions about potential responses and adaptations

This phase was crucial in providing universities with a cohesive framework for contemplating AI adoption while reflecting diverse values and strategies.

#### *Creative Sandbox Workshop (August 2024)*

The final workshop phase translated the future scenarios into tangible prototypes through a two-day online Creative Sandbox workshop. Building directly on the university models developed during the foresight workshop, academics worked in small teams to conceptualize practical solutions that could help realize these potential futures. This prototyping-focused approach moved the conversation from "what could be" to "how might we get there."



The Creative Sandbox methodology encouraged rapid ideation and collaborative refinement of concepts. Teams first identified specific challenges or opportunities within their assigned university model, then developed prototype concepts to address them. These ranged from AI-powered tools for connecting disciplinary knowledge to immersive cultural training platforms using virtual reality and storytelling. Each team worked through multiple iterations of their concepts, incorporating feedback from other participants to strengthen their ideas.

Throughout the workshop, participants not only developed specific prototype concepts but also explored the broader policy implications of implementing these innovations. This dual focus on concrete solutions and enabling policies helped bridge the gap between vision and implementation, providing practical pathways for universities to begin testing new approaches.

The workshop culminated in five prototype concepts, each accompanied by detailed consideration of implementation challenges, ethical considerations, and policy requirements. These outputs provided universities with both inspirational examples and practical guidance for beginning their own experimentation with AI integration.

### **Synthesis and Whitepaper Development**

Building on outputs from all project phases, we developed a comprehensive whitepaper to guide universities in navigating the AI transition. This synthesis work integrated multiple streams of insight: the baseline understanding of current AI applications from our desk research, patterns and challenges identified during the sensemaking workshop, future models developed through the foresight process, and concrete prototypes generated in the Creative Sandbox.

The whitepaper was designed to serve multiple purposes:

- Document lessons learned across different maturity levels of AI adoption
- Capture emerging teaching practices and exemplar models
- Provide practical guidance for faculty, students, and administrators
- Present scenarios for effectively integrating AI technology

This final synthesis phase was crucial in translating the rich discussions and outputs from the workshops into actionable frameworks and recommendations. The resulting document provides universities with both strategic perspectives on institutional transformation and practical guidance for implementing AI solutions while maintaining focus on equitable learning outcomes.

## **Use of Generative AI in This Project**

In keeping with our commitment to transparency and responsible AI use, we want to acknowledge how generative AI tools were employed throughout this initiative. These tools served as aids to enhance efficiency and productivity while ensuring human oversight and judgment remained central to the process.

### **Research and Analysis**

- NotebookLM was used to assist with source summarization and literature search during the desk research phase
- Claude assisted in summarizing workshop discussions

### **Report Development**

- Claude assisted with proposing and critiquing descriptors for the CRAFT framework rubrics
- Claude was used as a writing assistant to articulate certain key ideas from the researchers
- All AI-generated content was reviewed, edited, and validated by human authors to ensure accuracy and alignment with project objectives

### **Visual Elements**

- OpenAI's DALL-E was used to generate the cover picture for the report
- DALL-E also helped create images representing the different university models described in the report
- The front cover image was generated via openart.ai using stable-diffusion-3-sds (SD 3.0 public)

Throughout the initiative, we approached AI as a collaborative tool rather than a replacement for human expertise and judgment. All AI outputs were carefully reviewed and refined by subject matter experts, and the core insights and recommendations emerged from human discussion and deliberation during the workshops.

This transparent documentation of AI use aligns with our broader recommendation that institutions develop clear protocols for acknowledging and describing how AI tools are employed in academic work.

# Chapter 2: Generative AI Use Cases in Higher Education

As universities begin navigating a world shaped by generative AI, innovative educators and institutions are experimenting with ways to harness this technology. Through a scan of emerging practices, we find pockets of the future in the present – early examples that offer glimpses of how higher education might evolve. These pioneering applications, while still developing, help us understand both the possibilities and challenges ahead.

This chapter examines eight key areas where universities are already applying generative AI:

1. **Tutors and Learning Guides:** AI systems providing personalized, 24/7 academic support and guidance tailored to individual student needs.
2. **Course Development:** AI-assisted creation of learning materials, syllabi, and curricula, enabling more adaptable and personalized course content.
3. **Interactive Teaching Tools:** Dynamic AI-powered simulations, role-playing scenarios, and exercises that create immersive learning experiences.
4. **Visual Learning Aids:** AI-generated imagery and visualizations bringing abstract concepts to life across disciplines.
5. **Research Support:** AI tools accelerating literature review, data analysis, and research planning while surfacing unexpected connections.
6. **Assessment and Feedback:** Automated initial screening of student work and draft feedback generation, freeing educator time for higher-level evaluation.
7. **University Operations:** AI streamlining administrative tasks and providing data-driven insights for institutional decision-making.
8. **Admissions:** AI supporting application review and candidate selection while raising important questions about fairness and equity.

The examples that follow represent early experiments by educators and institutions testing the boundaries of what's possible. While these applications continue to evolve alongside the technology itself, they offer valuable insights into how universities might operate in a generative AI-enabled future.

# 1. Enhancing Teaching and Learning

## Tutors and Guides

Generative AI can serve as a 24/7 personalized tutor and learning guide for students, providing supplemental academic support. These AI tutors can adapt in real-time to each student's needs, misconceptions, strengths, and weaknesses, offering targeted one-on-one practice to cater to individual learning needs. AI tutors can identify knowledge gaps or errors in a student's work and provide customized explanations, practice questions, and feedback to address problem areas. They can also map out step-by-step approaches for students to arrive at correct solutions. Additionally, AI tutors analyze assignments and papers to check alignment with grading rubrics and ask clarifying questions to help students implement suggestions for improvement. Generative AI offers the possibility of supporting students' individual learning journeys at scale.

### ***Coding chatbot***

Harvard University's CS50 course developed a suite of GPT-4-powered AI tools, including a chatbot called the CS50 Duck, which have been shown to improve code understanding, enhance code style, and answer course-related queries from students. These were designed to guide students rather than provide direct answers.

### ***Programming coach***

An UNSW Sydney class leveraged ChatGPT to enhance student learning in programming. ChatGPT was used as a tool to address student questions and provide code solutions, helping students overcome immediate coding hurdles. Learning was facilitated through in-class demonstrations of ChatGPT use. In addition to teaching students how to code, this exercise also taught students valuable prompt engineering skills. Students learned how to articulate their questions effectively and understand the code provided by ChatGPT, making it a valuable tool for future learning.

### ***AI as ideation and editing guide***

A team of educators and learners at Nanyang Technological University (NTU) developed Waai, an application that leverages Generative Artificial Intelligence (Gen AI) to guide students through the

ideation and editing phases of writing. Waai's AI chatbot, Nudgy, acts as a writing companion, offering suggestions and prompts to help users brainstorm ideas and refine their thoughts on a given topic. Waai is now being used by a small group of students in the core module, Inquiry and Communication in an Interdisciplinary World. The app supplements in-class learning and sessions with tutors, assisting students as they work on their final assignment, a 1,200-word op-ed. Students have praised Waai's ability to help them overcome writer's block, generate more creative ideas, and refine their writing style.

## 2. Course Content Development

### Content Generation and Structuring

AI can assist instructors in various aspects of course development:

- **Generating Baseline Content:** AI can help create initial drafts of syllabi, lesson plans, assignments, and learning activities, saving instructors valuable time and providing a starting point for customization.
- **Defining and Applying Learning Outcomes:** AI tools can assist in defining course intended learning outcomes (ILOs) and applying them across various activities and assessments, ensuring alignment and clarity in the curriculum.
- **Structuring Course Materials:** Based on instructor input about goals, topics, and student levels, AI can help structure course outlines and organize materials, streamlining the often tedious process of course organization.

AI enables an agile, iterative approach to course development. By analyzing student feedback and performance data, instructors can refine materials through multiple rapid iterations.

### ***Course Design Assistant***

A professor at HKUST used ChatGPT as a course design assistant to align course intended learning outcomes (CLOs) with assessment activities. ChatGPT was employed to create a matrix mapping assessment stages to CLOs, knowledge domains, and Bloom's Taxonomy levels, helping visualize complex relationships and identify potential gaps in course design. A challenge encountered related to ChatGPT's understanding of complex frameworks. This was addressed by refining prompts and providing clarification when needed.

### ***Tailored case studies on demand***

AI expert and Wharton Ethan Mollick has demonstrated how AI can generate case studies on demand, complete with teaching notes, board plans, assignments, and rubrics. Case studies are a staple in business education, providing real-world scenarios for students to analyze and learn from. Creating these cases, however, is time-consuming and requires specialized knowledge on designing case studies.

## Interactive Exercises/Teaching tools

Generative AI facilitates creating engaging, gamified scenarios and conversations for interactive class activities. The dynamic nature of AI allows it to generate unlimited personalized situations, react in real-time, and even adapt based on interactions with students. Producing original exercises dynamically tailored to create immersive students experiences would otherwise be difficult or next to impossible given the resource constraints of educators. Generative AI is also being used to produce other interactive teaching tools and in-class exercises that facilitate active learning and develop critical thinking skills.

### ***Reflection chatbot***

A class at Stanford University's d.school uses an AI-powered chatbot called Riff to shift the traditional written reflection paper assignments given in classes into engaging conversations. Riff flips the format of chatbots and focuses on asking students thought-provoking reflection

questions about their experiences. Instead of leaving the student with a single reflection question, Riff continues digging into the student's thoughts and turns the interaction into a conversation.

### ***Role playing historical scenarios***

A class at UC Santa Cruz worked with ChatGPT to generate a variety of historical role-playing simulations for students to play as characters. The AI provides a situation set in a specific time period, and each simulation has a specific goal that the student must reach. For example, one simulation allows the user to become a traveler passing through Damascus during the bubonic plague who wakes up with a scratchy throat. In this case, the goal was to survive the plague and learn as much as possible about its impacts. The teaching objective is to train students to spot historical inaccuracies and develop skills in working with generative AI, such as fact-checking and correcting inaccuracies. The professor also sees this approach as a way to address declining student engagement in the humanities.

### ***AI-Enhanced Learning in Occupational Therapy Education***

A class at the University of Sydney prepares students for occupational therapy practice with the support of generative AI. Students leveraged ChatGPT4 via the Cogniti platform to generate ideas and refine occupational therapy treatment plans. The core AI element involved students presenting these plans to an AI-simulated teacher, "Mrs. S," who provided real-time feedback, mimicking a realistic interaction with a classroom teacher. This AI simulation allowed students to practice their communication skills, receive immediate feedback on their plans, and gain valuable experience applicable to future clinical placements.

### ***AI-powered critical analysis exercise***

For the Social and Developmental Psychology course at UNSW Sydney, an assessment was designed where students used ChatGPT to generate a first draft of a media release based on a published psychological research article. Students then critically analyzed the AI output, identifying its strengths and weaknesses in terms of accuracy, bias, and adherence to scientific writing standards. This critical analysis formed a significant part of the assessment, allowing students to learn about the limitations of AI and develop their own critical thinking and communication skills.

Requiring students to produce subsequent drafts without AI assistance fostered students' ability to independently analyze, revise, and refine their communication

## Visualization

Educators are beginning to explore the use of generative AI image tools like DALL-E and Midjourney to create visualizations that enhance teaching and learning. Current applications include generating images to illustrate complex concepts, design learning exercises, and create more engaging and relatable learning materials. This practice holds potential for developing immersive simulated environments and transforming how students interact with visual content in the future.

### ***Visual rendering***

A class at George Washington University encourages students to experiment with Midjourney, a digital art creation platform. Midjourney can quickly generate rendered floor plans, material palettes, and perspective renderings, allowing students to explore design concepts and produce professional-quality content in a fraction of the time it would take using traditional methods. Midjourney is seen not as a replacement for traditional design tools but rather a valuable supplement that can accelerate the creative process. One of his students is using Midjourney for her senior capstone project, creating material palettes, interior renderings, concept sketches, and diagrams for a cocktail bar and club. Images that would have taken weeks to create using traditional methods can now be generated in seconds, making the design process more efficient and allowing for more experimentation.

## 4. Research

### **Research Assistants**

Generative AI tools are emerging as research assistants to support researchers. AI can automate time-consuming scholarship activities like literature reviews, analyzing research data and trends, formulating hypotheses, and identifying promising research directions.



### ***Research assistant***

A lecturer in UNSW implemented the research assistant tool Elicit, an AI tool that finds 'seed articles' to mine for keywords/subject headings, in her Engineering Design and Professional Practice course to accelerate the research process for the students. While initially introduced through a lecture and classroom activity, it was observed that students were not utilizing Elicit effectively. This was mitigated by giving real-time in-class demonstrations on the use of Elicit, where students were shown how to use the tool to answer specific research questions relevant to their projects, offering immediate feedback and guidance.

### ***Research Rationale Writing Assistant***

In the Microbiology 1 course (MICR2011) at UNSW Sydney, students use GenAI to generate research rationales. This approach aims to leverage AI's ability to generate text and synthesize information, potentially leading to higher-quality rationales compared to traditional methods. To manage the potential risks of AI-generated content, including fabricated information and inaccurate references, students are provided with a lesson on AI limitations and dissected an AI-generated rationale with students, highlighting its flaws. While students appreciated the use of AI as a tool for brainstorming and generating ideas, they still needed to rely on their own critical analysis and understanding of the physical samples and laboratory processes.

## **5. Assessments and Feedback**

Generative AI tools have the potential to assist professors with some of the more routine aspects of assessment and feedback, freeing up their time for higher-level tasks. Generative AI tools can automatically check student work for basic comprehension of concepts, formatting, etc. It can flag issues or concerns, allowing an instructor to review these specific areas and provide more meaningful feedback tailored to each student's strengths and weaknesses. Used responsibly, AI can handle tedious tasks like initial screening and drafting feedback, so instructors prioritize providing more personalized feedback and building relationships with students to help each student grow.

### ***Generating assessment questions***

For an Earth and Environmental Science course at UNSW, a lecturer used ChatGPT to redesign assessments and enhance his teaching. ChatGPT was used to generate a wide range of multiple-choice questions for class tests, saving time and providing a diverse selection of questions the students might not have considered on their own. The lecturer also discussed the use of AI in the course, encouraged students to explore its potential, and provided guidance on responsible and effective AI use, particularly emphasizing the importance of prompt engineering.

## 6. University Operations

Generative AI offers new possibilities for enhanced efficiency and data-driven decision-making in university administration. AI tools are being used to automate routine tasks, freeing up staff time. AI is also being applied to model the impact of university policies and support services.

### ***Synthetic university students***

Ferris State University is conducting a pilot program with artificially intelligent virtual students, Ann and Fry, enrolled in a general education course. The goal is to gain insights into modern student learning experiences and understand how to better serve future students. Ann and Fry are intended to be neutral, with no race, political affiliation, or gender, providing a baseline for research. While the AI students initially listen to online courses, the goal is to eventually bring them to "life" as classroom robots that can interact with other students. The project aims to eventually have Ann and Fry complete their Ph.D.s and potentially work as teaching assistants or tutors.

### ***AI chatbots***

The University of Hong Kong (HKU) has implemented several generative AI chatbots powered by Azure OpenAI Service, including an IT Helpdesk Chatbot, an Administrative Chatbot, and a Teaching and Learning Chatbot. These chatbots aim to enhance various aspects of university life, from providing IT support and answering administrative inquiries to assisting with teaching and learning. Early adoption has been strong, with over 10% of students and 17% of staff using the general HKU chatbot within the first 20 days of launch, demonstrating a clear demand for these AI-powered services.

## **Admissions**

Generative AI is being applied to streamline admission processes including application reviews and candidate selection. This can free up staff from the more tedious elements of managing admissions to then be able to do more focused work in carefully selecting candidates and preparing for the new batch of students.

### ***College application reviewer***

Researchers at the University of Colorado Boulder and the University of Pennsylvania have developed AI tools capable of analyzing college application essays and identifying key personal traits, such as leadership and perseverance. These tools are not yet deployed at any institution, but they hold the potential to identify promising applicants who might otherwise be overlooked. While the use of AI in admissions is growing, concerns remain regarding potential biases and ethical considerations. Universities are working to address these concerns through the development of ethical guidelines for AI implementation and by incorporating AI literacy into their curriculum.

### ***AI-powered intelligent assistant***

Tellus is an interactive video interview and assessment platform that utilizes AI to provide insights and analysis. It allows administrators to set up asynchronous video interview sessions with applicants for purposes like admissions. Tellus is integrated with ChatGPT to assess coherence and relevance of responses to interview questions in admission processes. It can evaluate speech patterns, body language, and other non-verbal metrics. It also features automated transcripts of video interviews, enabling keyword identification, grammar checks, and textual analysis.

# Chapter 3: Learnings From the Frontier

As educators and researchers begin experimenting with generative AI, valuable lessons are emerging that can guide the adoption of generative AI as well as change in teaching, learning, and research.

As educators and researchers begin experimenting with generative AI, valuable lessons are emerging that can guide the adoption of generative AI as well as change in teaching, learning, and research.

These learnings were developed through a set of sensemaking workshops conducted with academics.

The learnings are organized into eight key themes:

1. **Building trust for AI systems:** Considerations around transparency, the rapid pace of AI development, and navigating cultural challenges.
2. **Governance and implementation:** Developing responsible AI frameworks, ensuring equity and accessibility, and managing the risk of amplifying biases.
3. **Creating opportunities for deeper and meaningful engagement:** Enhancing authentic learning experiences, intentionally pacing learning, and promoting equitable participation.
4. **'Pedagogy first, AI second' approach:** The importance of pedagogical knowledge, aligning AI with educational goals, and the emergence of prompt engineering as a new digital literacy.
5. **Shift to values and skills-based learning:** Preparing students for an AI-driven world, the potential catalytic effect of AI on assessment practices, and leveraging AI for novel research connections.
6. **Human-centric education:** Democratizing access to expertise, reconceptualizing authority, and balancing personalization with collaboration.
7. **The role of educators in the age of AI:** The evolving professional identity of educators and the shift from providing to facilitating knowledge.
8. **Faculty support:** The crucial role of AI literacy for faculty and the need for tailored professional development.

## Building trust for AI systems

**Transparency is essential for building trust in AI systems, but achieving meaningful transparency is more complex than simply disclosing information.** Workshop participants noted that

transparency is a key principle for responsible AI adoption, but discussions revealed the multifaceted nature of this concept. While providing information about AI systems' purpose, training data, and limitations is important, true transparency also involves ongoing dialogue and collaboration with stakeholders. This suggests that transparency should be viewed as an active, iterative process rather than a one-time disclosure.

**The rapid pace of AI development presents both opportunities and challenges for universities, but the most significant challenges may be cultural rather than technological.** Workshop discussions emphasized the breakneck speed of AI advancement and the pressure on institutions to keep up. However, participants noted that the biggest barriers to AI adoption in education were often not technical, but cultural. In one case study, a university had access to state-of-the-art AI tools, but struggled to get faculty buy-in due to concerns about job security and the value of human expertise. In another example, an institution faced resistance from students who felt that AI-enhanced learning was impersonal and transactional.

## Governance and implementation

**Universities are developing responsible AI governance frameworks, but there is a risk of these frameworks becoming static and inflexible in the face of rapid technological change.** A number of institutions represented in the workshop were in the process of creating policies and guidelines for ethical AI use in teaching and learning. While these efforts are crucial for ensuring responsible adoption, some participants raised concerns about the ability of governance frameworks to keep pace with the rapid evolution of AI technologies. In one case study, a university had developed a comprehensive AI ethics protocol, but found that it quickly became outdated as new AI capabilities and risks emerged. This suggests that responsible AI governance requires not just initial frameworks, but also mechanisms for ongoing monitoring, review, and adaptation.

**Equity and accessibility are key considerations in the adoption of AI in education, but there is a risk of AI amplifying existing biases and inequities if not implemented thoughtfully.** Workshop participants recognized the potential of AI to make education more inclusive and equitable, such as by providing personalized support for diverse learners. However, case study discussions also surfaced concerning the possibility of AI perpetuating or even exacerbating existing disparities if issues of bias and fairness are not proactively addressed.

## Creating opportunities for deeper and meaningful engagement

**Authentic learning experiences can be enhanced with AI, but authenticity involves more than just simulating real-world scenarios.** Case studies demonstrated the potential of AI to create learning experiences such as simulated patient encounters. However, workshop discussions also highlighted the importance of authenticity in terms of personal relevance and meaning-making. For instance, in a project-based learning course, AI was used to connect students with real-world datasets and expert mentors, allowing them to explore genuine problems that mattered to them. In a creative writing course, AI writing prompts were designed to elicit students' unique voices and experiences. These examples suggest that authenticity in AI-enhanced learning involves not just fidelity to real-world contexts, but also opportunities for students to bring their whole selves to the learning process.

**Educators may need to intentionally slow the pace of learning to counterbalance the speed of AI-powered experiences.** As AI tools enable students to access information and complete tasks more quickly, there is a risk that the pace of learning may become too rapid, sacrificing depth for speed. To mitigate this, one participant suggested that instructors may need to dedicate more time to reflection, discussion, and deeper exploration of course material. This highlights the importance of intentional course design and pacing to ensure that students have sufficient opportunities for meaningful engagement with the subject matter.

**AI-powered collaborative learning tools could promote more equitable participation among students.** In a discussion on collaborative learning, one participant shared their research findings, which indicated that group discussions were often dominated by the most knowledgeable student, limiting the participation of others. It was suggested that AI tools providing personalized feedback and support could help level the playing field, enabling more students to contribute meaningfully to collaborative activities. By offering targeted guidance, AI could empower students with varying levels of knowledge to engage more actively in group learning experiences.

## 'Pedagogy first, AI second' approach

**AI-assisted instructional design requires deep pedagogical knowledge to be effective.** In one case study, an educator experimented with using generative AI as a design assistant for creating educational courses. While the AI tool could automate tasks like mapping learning outcomes to assessments, the educator found that a deep understanding of pedagogy was still essential to

ensure the quality and effectiveness of the resulting curriculum. AI tools may not replace the need for pedagogical expertise in instructional design, but rather serve as a complementary tool that requires skilled human guidance.

**Pedagogy should drive technology adoption, but there are inherent challenges in mapping AI capabilities to pedagogical goals and principles.** Workshop participants agreed that educational goals and pedagogical principles should be the starting point for any AI implementation. However, case study discussions revealed that aligning AI tools with specific learning objectives and instructional strategies is often easier said than done. In one example, faculty in a biology department struggled to find AI applications that effectively supported their inquiry-based learning approach, leading to a mismatch between the technology and the pedagogy. In another case, instructors in a writing program found that the AI tools they explored tended to prioritize efficiency and standardization over the creativity and experimentation they valued.

**Prompt engineering is an essential skill for effective AI use, but it also represents a new form of digital literacy that goes beyond technical proficiency.** Workshop participants recognized the importance of crafting well-designed prompts to elicit meaningful outputs from AI systems. However, discussions also revealed that prompt engineering involves a complex set of skills and considerations beyond just technical know-how. Effective prompts need to be not only syntactically correct, but also aligned with pedagogical goals, learner needs, and disciplinary norms. In one case study, a faculty learning community focused on developing "pedagogical prompts" that integrated subject matter expertise, instructional design principles, and an understanding of AI affordances. This suggests that prompt engineering represents a new dimension of digital literacy that requires a holistic, interdisciplinary approach.

**Unintended AI behaviors can provide valuable learning opportunities in educational contexts and improve pedagogy.** In a case study involving a virtual patient AI, the agent displayed unexpected behaviors, such as smiling sheepishly, which were not part of the original design. In another case, an educator asked students to critically evaluate AI responses, including for hallucinations. Educators and developers should be open to learning from these unintended AI behaviors and use them to inform teaching methods, and the iterative design process of educational AI tools.

## **Shift to values and skills-based learning**

### **Universities have a responsibility to prepare students for an AI-driven world, but this responsibility extends beyond just technical skills to include critical thinking and ethical reasoning.**

Case studies highlighted the importance of equipping students with the technical skills to use and develop AI tools. However, workshop discussions also emphasized the need for students to develop higher-order abilities such as critical thinking, ethical reasoning, and metacognition in the context of AI. In one example, a computer science program not only taught students how to build AI systems, but also engaged them in discussions about the social and ethical implications of these technologies. In another case, a humanities course used AI as a lens to critically examine questions of agency, creativity, and what it means to be human. These examples suggest that preparing students for an AI-driven world involves not just technical proficiency, but also the ability to think critically and ethically about the role of AI in society.

### **The rise of AI in education may catalyze a shift towards values-based and skills-oriented assessments.**

Although assessment design was not a central focus of the workshop, one participant noted that the increasing use of AI in education might prompt educators to rethink their approach to evaluation. As AI tools become more adept at handling knowledge-based tasks, there may be a greater emphasis on assessing students' values, skills, and ability to apply their knowledge in real-world contexts. This insight suggests that the integration of AI in education could serve as a catalyst for a broader shift in assessment practices.

**Generative AI can help students explore novel connections and ideas in their research.** One case study highlighted how an AI-powered writing assistant exposed a student to new concepts related to their research question and explained their relevance. By suggesting unconventional connections and ideas, the AI tool helped the student broaden their perspective and consider approaches they might not have encountered otherwise. This insight underscores the potential of generative AI to stimulate creative thinking and support students in exploring diverse viewpoints and interdisciplinary connections in their academic work.

## Human-centric education

**AI can make expert thinking visible and accessible to students, but this requires a shift in how we conceptualize expertise and authority in education.** Several case studies showcased the potential of



AI to democratize access to expert knowledge and skills. However, workshop discussions also suggested that this shift requires a reconsideration of traditional notions of expertise and authority in educational contexts. In one case, a writing course that used AI-generated feedback had to grapple with questions of authorship and intellectual property. These examples highlight the need for educators to adopt a more expansive and inclusive view of expertise in the age of AI, one that recognizes the value of machine intelligence while also affirming the enduring importance of human judgment and creativity.

## Fostering human-to-human interaction

**The use of AI in education may lead to increased engagement with technology but decreased interpersonal engagement.** While several case studies demonstrated how AI tools can provide personalized support and interactive learning experiences, there was also a recognition that students might become overly reliant on these tools. One participant expressed concern that as students spend more time engaging with AI, they may spend less time collaborating with peers and developing essential interpersonal skills. This insight highlights the need for educators to strike a balance between leveraging the benefits of AI and fostering human-to-human interaction in the learning process.

**AI has the potential to enhance human interaction and feedback in unexpected ways, beyond simply providing efficiencies.** While many discussions emphasized the importance of human connection in education, several case studies highlighted how AI can actually enrich and enable more meaningful human interaction. In a writing course, AI-generated feedback served as a starting point for deeper discussions between students and instructors about the craft and process of writing. These examples suggest that AI, when designed purposefully, can amplify rather than replace human interaction.

**AI can enable more personalized learning support at scale, but personalization should be balanced with opportunities for collaboration and social learning.** Workshop case studies showcased impressive examples of AI-powered personalized learning, such as adaptive courseware and intelligent tutoring systems. However, discussions also highlighted the importance of social and collaborative dimensions of learning that should not be lost in the pursuit of individualization.

## Balancing human and AI-based decision making

**Balancing structure with flexibility and autonomy in AI-enhanced learning and tool design emerges as a central challenge, necessitating nuanced approaches that are sensitive to the educational context, goals, and individual learner needs.** Workshop discussions and case studies revealed a spectrum of preferences for AI integration in education, from highly structured applications in courses like physics, where AI simulations follow a strict sequence, to more open-ended explorations in the arts, encouraging creative engagement with AI tools. Similarly, the design of specific AI-powered applications, such as writing assistants, highlighted the delicate balance between providing necessary guidance and fostering student autonomy. Students' varied reactions to the level of control exercised by these tools underscore the importance of designing AI educational technologies that can adapt to diverse learning styles and preferences. This integrated insight suggests that the key to successful AI integration lies in customizing the balance between guided learning and independent exploration, avoiding one-size-fits-all solutions to accommodate the broad spectrum of student engagement and learning objectives.

## The role of educators in the age of AI

**As AI reshapes the educational landscape, the role of educators is evolving in significant and sometimes surprising ways, requiring a re-envisioning of professional identity and development.** Workshop discussions highlighted the transformative impact of AI on the nature and scope of educators' work. While some case studies emphasized the efficiency gains and time savings afforded by AI tools, others surfaced more profound shifts in the core responsibilities and competencies of teaching. In one example, faculty in a writing program found themselves spending more time on higher-level tasks such as providing individualized feedback and facilitating peer review, and less time on routine grading and administrative work. In another case, instructors in a computer science course had to develop new skills in AI ethics and responsible design to effectively guide student projects. These examples suggest that the integration of AI in education is not just a matter of adopting new tools, but also of fundamentally reimagining the role and identity of educators in the digital age. This transformation will require a significant investment in ongoing professional development and support to help faculty navigate the changing landscape of teaching and learning.

**The role of educators may shift from providing knowledge to facilitating knowledge flow and application in an AI-rich learning environment.** Throughout the workshop, participants noted that as

AI tools become more adept at delivering information and providing personalized support, the role of educators may evolve. Rather than being the primary source of knowledge, instructors may focus more on helping students navigate, critically evaluate, and apply the knowledge they acquire through their interactions with AI. This insight suggests a shift in emphasis from content delivery to facilitating the flow and practical application of knowledge in an AI-enhanced learning environment.

## Faculty support

**AI literacy is crucial for both students and faculty, but there is a significant under-investment in developing AI literacy for faculty.** While the importance of AI literacy for both students and faculty was widely acknowledged, the workshop revealed a surprising gap in institutional efforts to train and support faculty in this area. Many case studies highlighted the need for faculty to understand AI capabilities, limitations, and ethical considerations to effectively integrate these tools into their teaching. However, few examples emerged of comprehensive professional development initiatives to build faculty AI literacy. This suggests that institutions may be overlooking a critical component of successful AI implementation in focusing primarily on student-facing applications.

**Building AI literacy among faculty may require tailored learning paths based on their readiness levels.** The workshop discussions revealed significant variations in AI knowledge and readiness among faculty members. Given these differences, institutions may need to develop differentiated approaches to AI literacy training. This could involve offering a range of learning paths and support options, from introductory courses for those with limited AI experience to more advanced programs for faculty members already engaged in AI-related research or teaching. The insight underscores the importance of meeting faculty where they are in their AI literacy journey to ensure effective professional development.

# Chapter 4: Rethinking the University Business

## Model

The arrival of generative AI marks not just another technological disruption for universities, but rather a catalyst that brings long-brewing challenges to a head. While AI's impact on teaching, learning, and research is profound, it arrives at a moment when several megatrends are already forcing us to question fundamental assumptions about higher education.

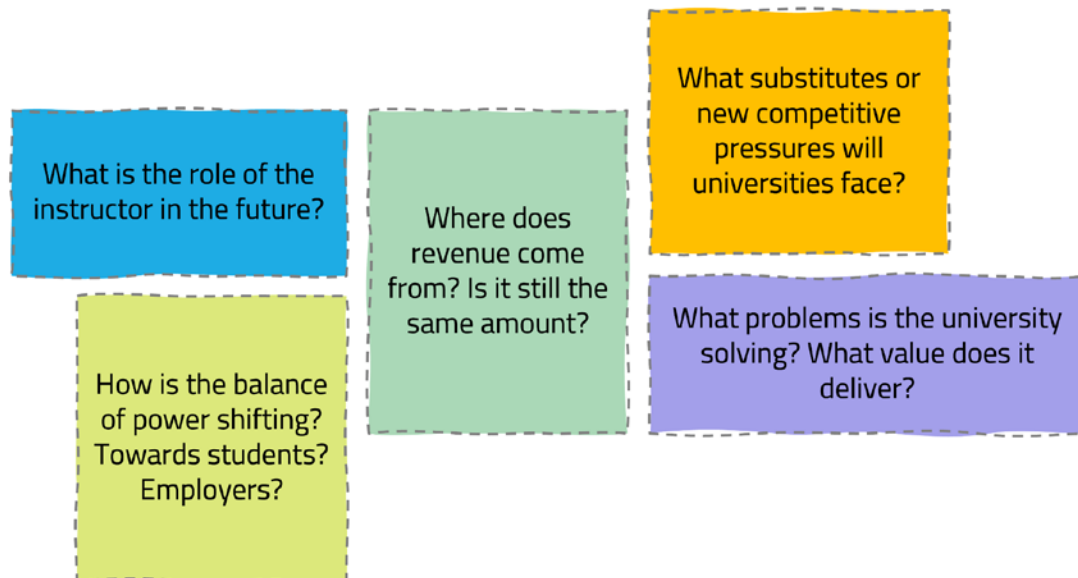
The financial returns on university education are declining while costs continue to rise. In Australia, 67% of people believe university education costs too much, while only 22% think the cost is about right. This skepticism is well-founded - even as Australians pay some of the highest university fees in the world, the earnings premium for graduates is shrinking. Across OECD countries, the earnings gap between university graduates and high school graduates has narrowed from 53% to 50% between 2005 and 2015. Meanwhile, the increasing availability of free or low-cost online educational resources, coupled with AI's ability to personalize learning and automate tasks, is putting further downward pressure on the cost of acquiring knowledge and skills. What if the cost of learning is driven down to zero?

Universities' traditional role as custodians of expertise faces mounting pressure from multiple directions. Over the past decade, the proliferation of online learning platforms, educational YouTube channels, and open courseware has democratized access to knowledge. Now, AI-powered tools are accelerating this trend by making expert knowledge and insights even more readily accessible, offering sophisticated guidance and explanations across domains that once required direct access to human experts. These tools can adapt content to individual learning styles, provide personalized feedback, and tailor experiences to specific career goals - all at scale. What if expertise is free and enabled by AI? What if there were an infinitely personalizable university experience?

The rapid pace of technological change is challenging both the relevance of traditional degrees and the model of front-loading education in early adulthood. The World Economic Forum projects that up to 44% of job skills will be disrupted from 2023 to 2027. Knowledge gained during a degree program may become outdated before graduation. Employers are responding to this reality - research shows 79% of companies in the Asia-Pacific region now prioritize demonstrated competencies over

academic credentials. What if degrees don't matter? What if university education wasn't a four-year engagement, but rather a fluid, lifelong learning journey with multiple entry and exit points?

These trends and questions demand more than incremental adaptations. Universities need to fundamentally reimagine their business models for this new reality. This means grappling with core questions about their future viability:



*Figure 1: Questions about the future business model of universities*

The universities that thrive in this environment will be those that develop business models where all elements work together as a coherent whole - from their educational philosophy and delivery methods to their funding approaches and organizational structure. Success requires more than cherry-picking attractive features or making isolated adaptations. Rather, universities need to design models where each element reinforces the others while responding to the changing external environment: the democratization of expertise, the evolving demands of work, shifting funding landscapes, and rising alternatives to traditional education.

## **The Models**

This chapter presents four distinct models for how universities might evolve in response to these pressures. These models represent not predictions but rather provocations — designed to spark imagination, debate, and experimentation – so that universities may proactively and intentionally

shape their futures by choosing and developing approaches that align with their vision of higher education's future.

Each model offers a different vision for how various elements of the university - from educational philosophy and delivery methods to funding approaches and organizational structure - might work together as a coherent whole in line with future possibilities.

Drawing from our workshops, the models are characterized by two key dimensions:

1. **AI Adoption** (vertical axis): The extent to which institutions embrace and integrate AI technologies across their operations, from limited tactical use to comprehensive strategic deployment.
2. **Mission Focus** (horizontal axis): Where institutions place their primary emphasis on the spectrum from research to teaching.

Just as today's higher education landscape encompasses diverse institutions with different missions - from research-intensive universities to teaching-focused colleges - we expect the future will see a rich ecosystem of institutions adopting different approaches. Many universities may blend elements from multiple models to create their own unique identity. The key is to intentionally design a coherent approach that aligns with institutional values, capabilities, and community needs for each institution.

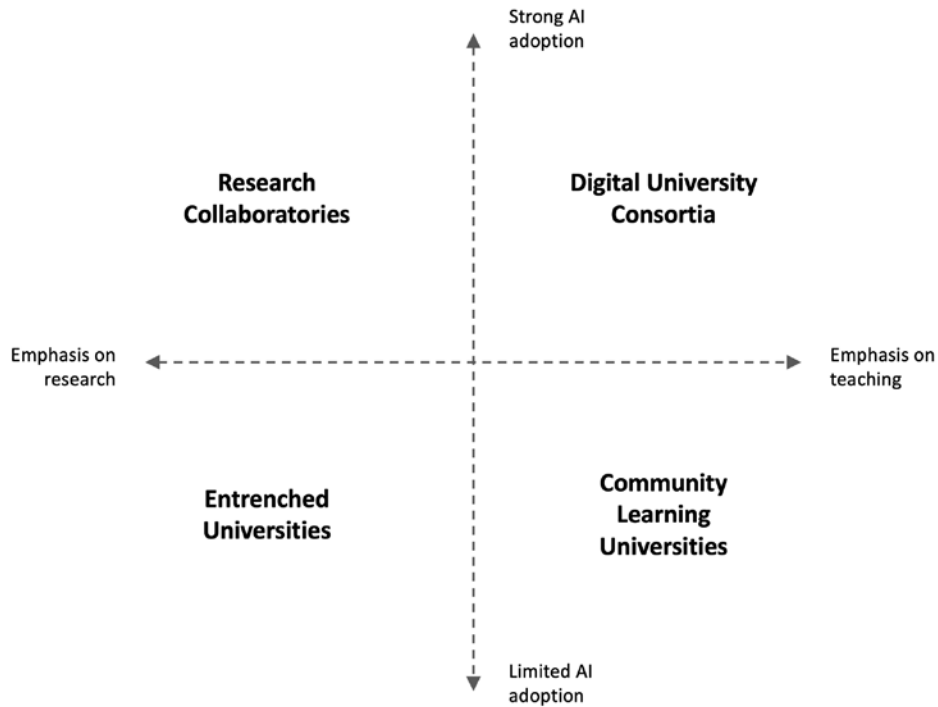


Figure 2: Models for Universities in a Generative AI World (2x2)

Imagine we are looking back from the year 2040, looking at a set of models that are now well-established. While we cannot predict exactly how quickly these changes will unfold - whether in 5, 10, or 15 years - these models offer a window into possible futures that can help university leaders make more intentional choices today about the direction they wish to pursue.

1. Research Collaboratories	2. Digital University Consortia	3. Community Learning Universities	4. Entrenched Universities
<b>Purpose:</b> Advance human knowledge and tackle grand challenges through intensive research	<b>Purpose:</b> Equip learners with marketable skills	<b>Purpose:</b> Develop well-rounded individuals who can address real-world challenges	<b>Purpose:</b> Advance knowledge creation
<b>Values:</b> Science and innovation to address critical social and environmental	<b>Values:</b> Teaching excellence, accessibility of higher education, global	<b>Values:</b> Holistic development of people, character development and	<b>Values:</b> Academic independence, institutional autonomy

challenges , global collaboration, interdisciplinary problem-solving	collaboration	critical thinking, people-centred education	
<b>Key Idea:</b> University focused on solving grand societal challenges like climate change through intensive research, with students learning through apprenticeship and direct participation in these moonshot projects.	<b>Key Idea:</b> Students draw the best content, expertise, and AI learning tools seamlessly across a global network of universities, leading to less redundancy and greater specialization across universities.	<b>Key Idea:</b> Small-scale institutions with low student-to-teacher ratios that prioritize face-to-face interaction and character development, strategically integrating AI while maintaining focus on human connection and local impact.	<b>Key Idea:</b> Today's university model with incremental changes, leading to a struggle to adapt to changing educational demands and financial environment.

# 1. Research Collaboratories

What if the university of the future doubled down on its role in research?

Many of yesterday's universities found themselves struggling to balance the tension between time and resources spent on teaching versus those spent on research. While teaching often paid the bills at a research-intensive university, the rest of its systems were geared toward promoting research excellence.

Research Collaboratories resolved this tension by developing a business model where teaching and research are the same activity. The research collaboratory was inspired by research institutes such as South Korea's University of Science and Technology where graduates learn through apprenticeship and working on research projects. A limited number of carefully selected students learn primarily through direct involvement in cutting-edge research projects, working alongside expert researchers.



Research Collaboratories assemble global interdisciplinary teams to tackle grand challenges in research and development, from energy transition to carbon capture to regenerative medicine. Generative AI plays a significant role in supporting and accelerating research collaboration. Every hypothesis tested 'in the real world' stands on top of mountains of synthetic research, where hundreds or thousands of hypotheses are automatically generated by AI reviewing literature and tested in simulations or through digital twins to determine the most promising – and sometimes unexpected – research directions. Generative AI is helping increasingly large and complex global teams work together without collapsing under the weight of coordination and bureaucracy, summarizing the research progress of individuals and routing it to relevant team members, enabling people to spend less time updating each other and more time brainstorming building on each other's work.

This model became much more common – and sometimes necessary – as governments reallocated research and other university funding towards strategic priorities. As the need grew for bold and ambitious innovation around topics such as energy transition, climate resilience, food security, and biotechnology, governments and foundations began dedicating large amounts of money to engage in "moonshot" R&D. The European Commission piloted this strategic reorientation through the Grand Challenges Programme, which funds missions such as protecting oceans and waters, adapting to climate change, ensuring healthy soil and food, and living in greener cities and other governments followed suit. Governments recognized universities as crucial partners and used their financial leverage to ensure alignment with what they saw at the country's most urgent scientific and technological challenges.

## **2. Digital University Consortia**

What if the university of the future was redesigned for a world of abundant, high-quality, and personalized educational content?

In a world where high production value teaching content was available online, where many students were watching recorded lectures at home, and where students were asking AI tutors to provide personalized explanations, delivering an average teaching experience for tens of thousands of dollars

a year in tuition was no longer tenable. The death of the 5-page essay at the hands of AI came quickly but the death of the lecture came more gradually because it forced deeper changes.

In Digital University Consortia, universities operate as nodes in a network, providing students with the best learning experiences from universities around the world. No longer does every university in the network create its own introduction to chemistry course. A single, high-production value of the course is developed and delivered to all students. It combines engaging video content with live instructors, AI-supported tutoring, and AI-powered simulations and assessments, allowing the network to deliver personalized, high-touch learning experiences to large numbers of students. Facing increasing competition, universities were pressured to band together and invest jointly in developing learning experiences. The competition came from three areas: alternative education providers online investing millions in venture capital money to produce high production value content, larger universities and their ability to invest in hybrid content, and large businesses like Meta and Eli Lilly developing their own career-focused education offerings.

The Digital University Consortia is the Star Alliance or Oneworld of education, allowing students to construct individual learning journeys by accessing a diverse pool of offerings from a consortium's member institutions. Learners select from a vast menu of modules, micro-credentials, and experiential learning opportunities offered by a diverse network of providers, including universities, companies, non-profit organizations, and even individual experts from around the globe. Students can earn and redeem credits across the consortium. This collaborative approach reduces duplication and allows universities to dedicate in-person teaching time to specialized, in-person learning experiences. While some students still do 4-year degrees, the declining half-life of knowledge and skills has led many students to take up shorter credentialing programs and come back more frequently to update their education.

Generative AI is an integral part of the learning experience through personalized tutoring, simulations, and guidance. Each student has an AI "co-pilot" that tracks their learning journey, identifies strengths and weaknesses, and provides tailored learning and career recommendations, allowing for a highly individualized learning experience. Students gain access to synthetic professors trained on the work of real professors, which they can continue consulting after they graduate.

In the Digital University Consortia, research teams are more global and research is better integrated into teaching. As traditional institutional boundaries have loosened, a more fluid and open ecosystem of research has emerged. Professors spend less time on introductory courses and more time teaching advanced topics and pursuing their research. A generative AI course content assistant quickly identifies new research from across the network and suggests edits to integrate it into teaching.

### **3. Community Learning Universities**

What if universities responded to generative AI by going back to their (offline) roots?

Community Learning Universities focus on human connection first and bring in generative AI later. They double down on the idea that universities should build character, values, and critical thinking skills to shape well-rounded people. The Community Learning University provides a holistic and people-centred learning experience that puts students face-to-face with complex social and environmental challenges in their local communities.

Teaching at Community Learning Universities is highly interactive and experiential, emphasizing small-group discussions, collaborative projects, and a shared sense of purpose. Students engage in hands-on action learning projects that directly address the needs and priorities of local communities. The emphasis on offline activities such as discussions and hand-written essays represents a purposeful carving out of AI from the learning experience. AI is introduced in the learning experience in the second half of the degree, where students learn to use AI tools so they can succeed in the workplace.

Research within the Community Learning University extends this commitment to community engagement and real-world impact. Faculty and students work alongside community organizations and residents to address locally relevant issues, conducting research that informs action and drives positive change. For example, a Community Learning University research team might collaborate with a local environmental group to investigate the impacts of air pollution on vulnerable populations.

The financial model of the CLU combines traditional tuition revenue with innovative approaches that reflect its unique mission and structure. Recognizing that its commitment to small class sizes, personalized mentorship, and deep community engagement requires diverse funding sources, the CLU seeks to build a sustainable financial ecosystem. This includes tuition on a sliding scale vis-a-vis students' socioeconomic status, government support, philanthropic partnerships, industry collaborations, and revenue from community services.

## **4. Entrenched Universities**

What if universities don't adapt?

Generative AI brought change to the Entrenched University – but not enough to address the transformative forces shaping higher education's future. Established institutions chose the path of least resistance when facing a changing environment. Rather than developing comprehensive strategies and rethinking core business models, Entrenched Universities made only incremental adaptations to their operations.

While these universities developed guidelines and policies on AI use, the changes largely reflected their decentralized and fragmented nature. Individual professors and departments independently decided how to adopt generative AI – or prevent students from using it. Administrations implemented AI in limited areas under their control, such as enhancing back-office efficiency and supporting student services.

Meanwhile, competition from university alternatives intensified. Online institutions created highly engaging, personalized learning experiences. Specialized providers offered cutting-edge technical training. Major corporations like Microsoft and JP Morgan developed their own degree alternatives, offering education tightly coupled with employment opportunities and building proprietary talent pipelines. Simultaneously, the pool of prospective students shrank due to growing skepticism about higher education's value and financial returns, compounded by a declining youth population.

Declining enrollment strained universities financially, leading them to be dismantled or become shadows of their former selves. Dependence on tuition and government support, coupled with falling

enrollment and intensifying competition, trapped Entrenched Universities in a vicious cycle. Unable to invest in the necessary infrastructure and resources to adapt to an AI-driven world, these institutions faced a slow, painful decline into irrelevance. Many universities were forced to seek new financiers for recapitalization. Private equity firms acquired distressed institutions. Some underwent significant staff reductions and were reshaped into leaner "teaching machines." Others were dismantled for assets, with valuable land and buildings carved out into separate corporations and leased back to the universities until they could no longer afford payments.

# Chapter 4: From Models to Action: Early Experiments in Transformation

The future models outlined in the previous chapter represent distinct visions for how universities might evolve in response to generative AI and broader changes in higher education. But how do institutions begin moving toward these futures today? Rather than waiting for perfect solutions or comprehensive transformation plans, universities can start with focused experiments that test key elements of these models while learning what works in their specific contexts.

Through our Creative Sandbox workshop, participants developed concrete prototype concepts that universities could implement now to begin exploring different aspects of these future models. These prototypes represent "minimum viable experiences" – carefully scoped initiatives that allow institutions to start learning and adapting quickly rather than attempting wholesale transformation all at once.

The prototypes that emerged from our workshop aren't meant to be comprehensive solutions. Instead, they offer starting points for universities to begin testing and learning about different approaches to education in an AI-enabled world. By implementing these kinds of focused experiments, universities can:

- Gain practical experience with new ways of teaching, learning, and conducting research
- Build institutional capability in working with AI
- Generate evidence about what approaches resonate with students and faculty
- Develop insights that inform larger strategic decisions about future direction
- Create momentum for broader transformation through early wins

This chapter presents several prototype concepts aligned with different future models, along with key considerations for implementation. While every university's journey will be unique, these examples offer concrete ways to begin exploring and shaping possible futures rather than simply waiting for them to arrive.

# 1. Digital University Consortia

**Gen AI-based University Knowledge Connector.** The Knowledge Connector prototype reimagines how universities can break down traditional disciplinary silos to create a dynamic, interconnected network of knowledge. At its core, it is an AI-powered system that analyzes and connects diverse academic content - from research papers and course materials to lecture recordings and educational videos - across multiple institutions. The system goes beyond simple keyword matching, instead understanding conceptual relationships to surface unexpected but relevant connections between disciplines. For example, when students tackle a complex challenge like developing climate-resilient urban infrastructure, the Connector could pull together insights from engineering, environmental science, sociology, and economics, showing how different fields approach related problems. The system would continuously update as new content is added, creating an evolving knowledge graph that reflects the latest research and teaching materials from across the consortium. This prototype addresses a fundamental challenge in higher education: how to help students and faculty navigate and synthesize knowledge across disciplinary boundaries to address complex real-world problems.

**Prototyping:** To test this concept, a pilot project could be launched within a single university or across a small group of collaborating institutions. Initially, the prototype could focus on integrating knowledge resources from a limited number of disciplines relevant to a specific challenge. Evaluating user experiences and refining the AI's ability to connect knowledge in meaningful ways would be crucial for iteratively improving the Connector.

**OneUni Alliance.** This prototype explores how universities can collaboratively deliver high-quality education at scale while preserving institutional strengths. The OneUni Alliance creates a shared digital infrastructure where participating universities can offer their strongest courses to students across the network. The system would handle the complex logistics of cross-institutional enrollment, credit transfer, and learning pathway customization. For instance, a student in Vietnam could take a global health course co-taught by professors from multiple universities, combining online lectures from international experts with local in-person sessions that provide regional context. AI would play a crucial role in personalizing the learning experience, adjusting content delivery and support based on individual student needs while ensuring consistent quality across different institutional contexts. The prototype aims to demonstrate how universities can move beyond traditional competition to create a more collaborative and efficient educational ecosystem.

**Prototyping:** The OneUni Alliance could start with a pilot project focusing on a small number of introductory courses shared across a few participating universities. Key aspects to test would be the effectiveness of the AI-driven logistics and management system, the impact of personalized tutoring and adaptive learning support on student outcomes, and the feasibility of achieving quality assurance across institutions.

**MedEval.** MedEval reimagines how medical education can be delivered and assessed across a network of institutions while maintaining high standards of clinical competency evaluation. This prototype explores the intersection of AI-powered assessment and medical education, addressing the challenge of providing consistent, high-quality feedback on complex clinical reasoning tasks across different institutional contexts. In practice, medical students would engage with detailed case studies where they analyze patient symptoms, develop diagnostic hypotheses, and create treatment plans. The AI system would evaluate their clinical reasoning process in real-time, examining not just the final diagnosis but the thought process leading to it. For example, when a student works through a complex case presentation, MedEval would analyze their approach to gathering patient information, their consideration of different diagnostic possibilities, and their ability to integrate various clinical factors into a coherent treatment plan. The system would provide immediate feedback on their reasoning process, flagging potential gaps or oversights, while still preserving the crucial role of human instructors in providing nuanced guidance and mentorship. By sharing standardized cases and assessment frameworks across institutions, MedEval would help establish consistent evaluation standards while still allowing for local adaptation to different healthcare contexts. This approach supports the Digital University Consortia model by enabling collaborative medical education at scale while maintaining rigorous professional standards.

**Prototyping:** A pilot project could focus on developing and testing AI-powered assessment modules for specific medical courses, evaluating the accuracy and effectiveness of AI feedback compared to human grading. Exploring the potential for AI-generated case studies that incorporate diverse patient presentations and cultural nuances would also be a valuable next step.

## 2. Research Collaboratories

**AI-PI (Artificial Intelligence - Personal Investigator).** The AI-PI prototype reimagines how research teams work in an AI-augmented future, addressing the growing complexity and interdisciplinary nature of modern research challenges. This AI research assistant would serve as an intelligent



collaborator throughout the research lifecycle, from initial ideation to publication and funding. For example, when exploring new research directions in renewable energy technologies, AI-PI would analyze current research trends across multiple disciplines, identify potential collaborators with complementary expertise in areas like materials science or electrical engineering, and help formulate compelling research questions by spotting gaps in existing literature. The system would go beyond simple literature reviews - it would identify emerging patterns across different fields, suggest novel methodological approaches, and even help draft sections of grant proposals by understanding what makes successful applications in specific fields. What sets AI-PI apart is its ability to serve as a thought partner rather than just a search tool, prompting researchers to consider unconventional connections and approaches they might not have otherwise explored. The prototype directly supports the Research Collaboratory model's emphasis on interdisciplinary problem-solving and global collaboration by making it easier for researchers to work across traditional boundaries and tackle complex challenges more effectively.

**Prototyping:** Initial development could focus on creating AI modules tailored to specific research tasks, such as literature review, grant proposal writing, or data analysis. Pilot projects within specific research groups could test and refine these modules, evaluating their impact on research efficiency and effectiveness.

### **3. Community Learning Universities**

**WISE (Wholly Immersed, Story-based & Experiential).** The WISE prototype explores how AI can enhance rather than replace human connection in education, aligning with the Community Learning University's focus on character development and real-world engagement. This immersive training platform uses AI to create culturally authentic scenarios where students can practice complex social interactions in a safe environment. For example, a nursing student might interact with an AI avatar programmed with specific cultural backgrounds, communication styles, and healthcare needs. The AI would respond dynamically to the student's approach, helping them develop cultural competency and communication skills through repeated practice. What makes WISE unique is its emphasis on story-based learning - each scenario is embedded within a larger narrative that helps students understand the broader social and cultural context of their interactions. The system is designed to complement rather than replace real-world experiences, preparing students for more meaningful engagement with their communities. This prototype demonstrates how AI can be thoughtfully integrated into a

human-centered educational model while preserving the emphasis on personal development and social impact.

**Prototyping:** A pilot project could focus on developing a limited number of culturally specific scenarios and avatars relevant to a particular discipline, such as healthcare, social work, or education. User feedback and iterative design would be essential for ensuring cultural sensitivity, accuracy, and effectiveness of the learning experience.

# Chapter 5: Ways Forward

*\*This chapter is adapted from the project's Whitepaper "[Generative AI in Higher Education: Current Practices and Ways Forward](#)" authored by Professor Danny Liu and Professor Simon Bates, published in January 2025. Please read the Whitepaper for more about the 'CRAFT' framework and recommendations.*

As previous chapters have shown, adaptation and adoption of generative AI in the higher education sector has generally not been systematic. While pockets of innovation exist, many institutions lack personnel with necessary expertise to implement and manage AI effectively. There are very legitimate concerns around data protection, use and misuse of intellectual property, algorithmic bias, academic integrity, and the ethical and responsible use of AI by students and educators. Likewise, inequitable access and the potential to broaden the digital divide are important considerations. Additionally, a deeper existential threat is felt by educators and staff who may see their functions or parts of their roles being capable of being diminished or being replaced by AI, those who may not know how to adapt from more traditional teaching approaches, and who are already under significant workload pressures.

These challenges have led to the cautious and somewhat piecemeal approach to generative AI adoption by universities across institutions comprising the Association of Pacific Rim Universities. Like industry, where individual experimentation as opposed to strategic organizational engagement has been the prevailing response, higher education is now at a stage where it needs to transition to a holistic, supported, and scaffolded approach to generative AI adoption. The higher education sector has been quick to bring groups together to define and adopt high level principles that espouse humanity, ethics, integrity, amongst others, but a gulf exists between this and what university stakeholders like leaders, educators, and students need to effectively integrate generative AI into specific educational, research, and operational processes.

This chapter aims to bridge this gap by offering a practical framework to help universities move from high-level principles to systematic implementation. The CRAFT framework identifies five essential elements—Culture, Rules, Access, Familiarity, and Trust—that institutions must address to successfully integrate AI across their operations. For each element, we provide concrete guidance for different stakeholder groups along with rubrics to assess current status and plan next steps.

One underlying philosophy for this framework is to reframe the approach to generative AI from 'policing' to 'possibilities'. With the increasing ubiquity of generative AI functionality, tools, and platforms, it is not feasible nor desirable to restrict, limit, or ban generative AI, nor to be overly fearful of 'what is left' for humans. Rather, our approach is to consider 'what is now possible' because generative AI is here.

To help universities approach this challenge head-on, this chapter identifies key stages of development and actions that can be taken by, and affect, leaders, educators, and students within their contexts, taking into consideration their spheres of control, influence, and concern.

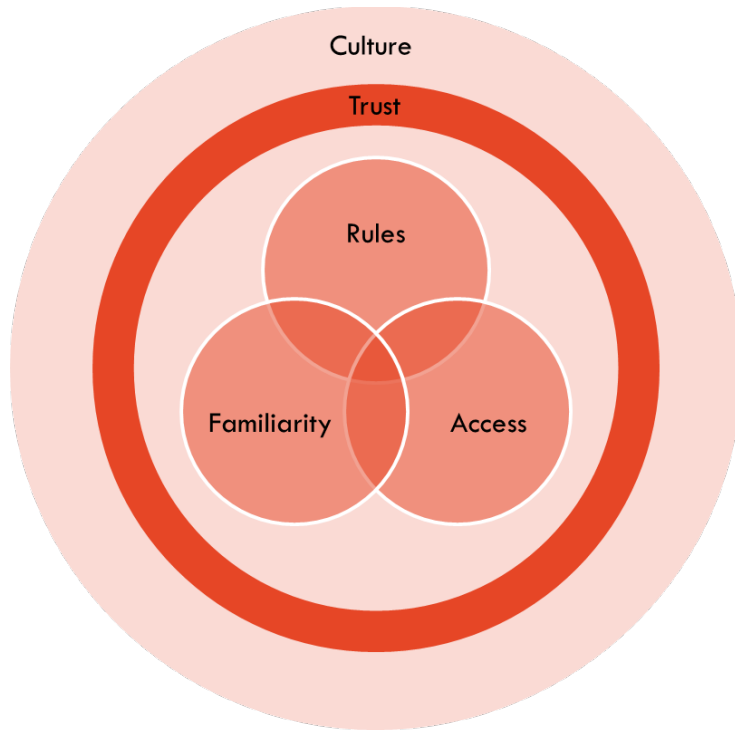
## **Five areas for action**

### Immediate key areas of activity

There are three core areas of focus for universities to enable work towards the goal of productively and responsibly integrating generative AI into their education, research, and operational functions. A combination of and balance between (1) rules, (2) access, and (3) familiarity is needed to enable appropriate adoption. A lack, or misbalance, of one or more of these areas may lead to ethical, privacy, security, academic integrity, or other challenges.

These three areas are underpinned by a foundational layer of (4) trust between students, educators, leaders, vendors, partners (industry, government, and community), and AI itself. Rules, access, familiarity, and trust are then situated in, and influenced by, an institution's local, regional, and even global (5) culture that includes attitudes, philosophies, and perspectives of individuals and groups of society, academia (universities and subunits), and governments.

Together, these make the CRAFT framework (Figure 1) for generative AI adoption in higher education. We unpack each of these components, along with implications for different stakeholder groups along their generative AI journey.



*Figure 3: Interaction between the five core areas of activity needed to address generative AI in higher education*

## Looking ahead

The CRAFT model synthesizes a practical and scaffolded way for institutions and the sector to respond to generative AI responsibly, systematically, and productively. It can assist institutions to move forward in a way that allows us to address the opportunities and risks of generative AI as technology rapidly progresses, while maintaining the relational, human, and altruistic values that underpin higher education.

There is, to some extent, a general sense of overwhelm given the scope and scale of these challenges. In looking ahead, we offer closing thoughts of two key priorities APRU and its member institutions might explore and is well-positioned to do so as a network of institutions. The thread connecting both of these is one of collaboration: we need to work together to reimagine our future.

## Form collaborative clusters

Collaboration within and between institutions will be a key to future success for the sector. This could be regional in scope or focused on particular issues of generative AI adoption and application. We provide a small selection of examples of focus areas here to act as a starting point for further exploration and discussion:

- **Oceania universities cluster.** Facing similar challenges around sustainability, geographical isolation, and a diverse domestic and international student population, these universities, together with governments, could collectively lobby vendors for early access to environmentally friendly frontier AI models at a discounted rate to allow for equitable access and broader experimentation across a diverse population. Access to and familiarity of state-of-the-art AI, especially for traditionally marginalised and rural educational communities, could boost AI research efforts around biases and safety, meaningful pedagogical uses, and applications to environmental research.
- **Custom AI cluster.** Control and visibility of generative AI are important to foster trust amongst educators. Instead of institutions building their own custom AI platforms, a cluster of institutions could collaborate on a shared platform that could then build towards more use cases and functionality to suit a range of contexts. Shared lessons from these experiments could inspire more educators to create their own custom AIs and develop best practices around how custom AIs could be used to augment and supplement, not replace, good teaching and teachers.
- **Assessment redesign cluster.** The assessment landscape across universities in the Pacific Rim has significant similarities. Almost two years since the popularisation of generative AI, educators and institutions are still struggling to establish rules and build familiarity with assessment design for the age of AI. Cross-sector sharing of approaches to assessment redesign, the designs themselves, and lessons learned from implementation would significantly reduce unnecessary reinvention and repeated mistakes. This would need curation to ensure the collection is coherent and aligned to reality and sector goals.
- **Faculty development cluster.** Building educator familiarity is a precursor to building productive and responsible student use of generative AI. However, many universities struggle to provide effective professional learning around generative AI, and struggle to engage staff and faculty in these offerings. Sharing training material, resources, and mishaps across the sector will help uplift the familiarity-building capacities of institutions, especially those that

do not have a well-resourced faculty development team. Collaboration with industry, such as with LinkedIn Learning, may also expedite the development of resources and improve industry relevance of professional learning.

- **AI governance cluster.** Establishing future-proof rules around generative AI is essential to providing a safe environment for experimentation and failure. These settings would be similar across geographic clusters of APRU institutions, having similar cultural approaches to education and technology. Instead of re-inventing the foundational principles, policies, and procedures, these institutions could collaborate to share perspectives amongst leaders, educators, researchers, students, and their communities to develop regionally-relevant and future-looking governance around generative AI.

## Elevate students as partners

As the key beneficiaries of higher education, students need to be citizens of their own learning. They have a critical role to play in supporting educators, their own peers, and the institution more broadly in developing familiarity, establishing rules, growing trust, and changing culture. We provide a small selection of examples here to act as a starting point for further exploration:

- **Students helping students.** Not all students are experimenting with generative AI nor are comfortable in its use. Finding ways of surfacing and sharing productive and responsible use of generative AI by students, as well as diverse student perspectives, will benefit both students and staff. This may be through reference resources such as curated websites , or through student-run or student-facilitated sessions where peer support and guidance is available to build familiarity and share concerns around using generative AI for learning. With support from the institution, more experienced peers could more effectively help other students navigate the rules and applications of generative AI from experience.
- **Student AI ambassadors who co-design AI-enabled learning and assessment experiences.** Educators can benefit significantly from student input, especially in emerging technologies. Appropriately trained student AI ambassadors could work directly with educators to provide new perspectives on teaching and assessment design in the context of generative AI. For example, the Students as Learners and Teachers program from Bryn Mawr college, started in 2007, has student consultants working closely with faculty partners, building trust and contributing to pedagogical improvements. To stimulate action on much-needed assessment redesign, student groups could run white-hat ‘assessment hackathons’ where they used any

available generative AI-enabled application to complete to assessments that educators proffer. Partnering with students will simultaneously help to build students' and educators' familiarity and reduce the stigma that exists around generative AI.

The Whitepaper has provided a point-in-time snapshot of the current state of promising approaches and activity gaps across the generative AI in higher education landscape, together with a framework for generative AI adoption across and within institutions. It is our hope that this can support the ways our institutions individually and collaboratively, chart their pathways through this dynamic and evolving landscape, towards realizing the significant potential to support and enhance learning, whilst at the same time addressing and mitigating some of the attendant challenges.

For more insights, please read the Whitepaper "[Generative AI in Higher Education: Current Practices and Ways Forward.](#)"



# Annexes

1. Generative AI Case Studies Presented at the Sensemaking Workshop
2. Prototypes from the Creative Sandbox Workshop
3. Policy Areas to Explore from the Creative Sandbox Workshop

Annex 1:

Generative AI Case Studies Presented  
at the Sensemaking Workshop

# <Case Teaching and Learning in the Age of Generative AI>

## WHY

*What is the problem the project addresses?*

- Addresses the **unawareness** of inaccurate and biased information generated by Generative AI (GenAI) tools in teaching and learning.
- Aims to enable students to simulate realistic dialogues on GenAI tools and **critically review** findings and sample work generated by GenAI tools for case development and analysis.

## WHAT

*What was done? How was generative AI used?*

- Teaching Team:
  - Fostered authentic learning through **experiential approaches** with GenAI tools.
  - Guided students on the **curation and analysis of cases** using GenAI tools.
  - Measured students' learning progress and provided timely feedback.
- Students:
  - Conducted **progress presentations** to report findings from GenAI tools and demonstrated their critical responses to those findings.
  - Created video cases and case analyses.
  - Wrote **reflective essays** to reflect on the ethics of GenAI (tools) in teaching and learning.

## CHALLENGE

*What challenges have you encountered in this work?*

- To encourage students to exercise their own **critical** judgments on the accuracy and truthfulness of information generated by GenAI tools (for case development).
- To encourage students to **critically** evaluate the validity and soundness of arguments produced by GenAI tools (for case analysis).

## HOW (IMPACT)

*How is this creating an impact? What effects are you seeing? Are there unintended effects you are observing?*

- Enhanced students' critical thinking skills and fostered their creativity and the development of **ethical mindsets**.
- Instead of relying on GenAI tools, some students preferred formulating their arguments or at least polishing substantially the arguments generated by GenAI tools.

# Tellus: AI Assessment Platform

## WHY

*What is the problem the project addresses?*

- Tellus was created to **help teachers/students/institutions transition to new assessment formats** brought about by AI.
- Rise of tools like ChatGPT mean that more teachers are relying on **alternative assessment methods** like verbal exams.
- How to help teachers **process large volumes of video interviews?**
- How to help **students improve interview skills** without human coaching?

## WHAT

*What was done? How was generative AI used?*

- Generative AI is used for several purposes:
  - Currently, we offer a **ChatGPT integration** that helps score interview responses according to their **answer coherence and relevance to the question**. This provides teachers and students with **qualitative feedback** in addition to quantitative metrics.
  - In development: generative AI features for **generating interview questions based on relevance** to the job description and taking into account the applicant's CV.
- We use **other AI algorithms** to perform multiple functions on the platform, such as:
  - **NLP** to check text sentiment, keyword matching, grammar, entity identification, speaking smoothness and speed
  - **Video analytics** to analyze facial expressions, attentiveness, body movements

## CHALLENGE

*What challenges have you encountered in this work?*

The challenge in developing Tellus is to make sure our **assessments are both fair and accurate**, while also **effectively communicating** this reliability to users.

- **Algorithm Transparency:** Ensure that the algorithms used for assessment are transparent and understandable to users. This transparency builds trust and helps users understand how assessments are made.
- **Continuous Improvement:** Commit to continuous improvement by gathering feedback from users. Use this feedback to refine algorithms and enhance overall performance.
- **User Education:** Educate users about the capabilities and limitations of Tellus. Providing information about how the system works and its reliability helps manage user expectations and build trust.

## HOW (IMPACT)

*How is this creating an impact? What effects are you seeing? Are there unintended effects you are observing?*

- Students are currently using the system for interview practice and we are collecting data on their progress. We hope to find that **multiple uses of Tellus give interviewees more confidence and improves their interview skills**.
- We also hope to find that **teachers are able to process verbal feedback and interview sessions more effectively** with the AI assistant in Tellus.

# A University-Led Strategy towards an Ecosystem of Responsible Generative AI Applications for Teaching and Learning

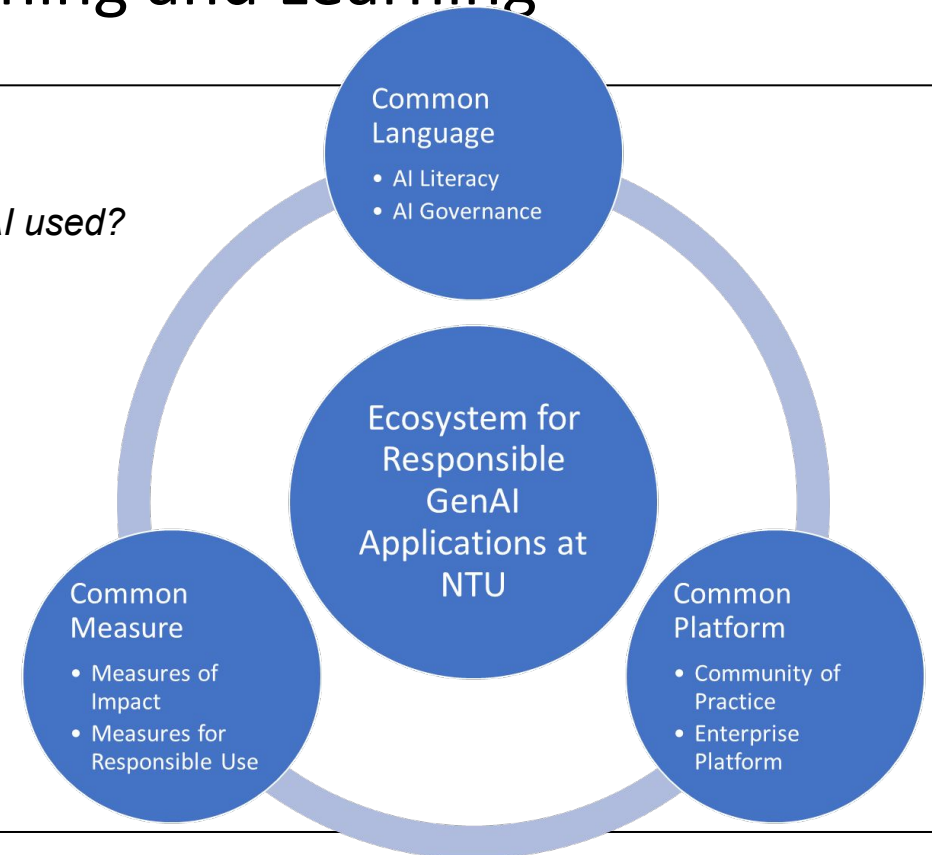
## WHY

*What is the problem the project addresses?*

- *AI Literacy*
- *Governance & Responsible Use*
- *Enable Experimentation of GenAI Application for Teaching and Learning*

## WHAT

*What was done? How was generative AI used?*



## CHALLENGE

*What challenges have you encountered in this work?*

- *No standard act for AI governance for generative AI*
- *Need for consultation with many parties*
- *Stakeholders' anxiety and expectations*
- *Competition among teams*
- *Enterprise platforms are still in general in preview (things change very quickly)*

## HOW (IMPACT)

*How is this creating an impact? What effects are you seeing? Are there unintended effects you are observing?*

- *Common Language: Governance Policy almost ready*
- *Common Platform: Community of Practice – Growing from 33 in Dec 2023 to 75 members in Mar 2024.*
- *6 Demos Applications*
- *Enterprise Platform – Identify the key platforms and services/features to be used as sandbox*
- *Common Measure of Impact – Being used in at least three projects*
- *Common Measure for Responsible Use – Finalising soon with policy paper*

# AI Readiness and Co-Designer

## WHY

*What is the problem the project addresses?*

**This is a combination of two case studies, both touching on AI readiness (literacy) of students and teachers who utilize generative AI tools to solve problems. For example, faculty using AI tools as a co-designer for instructional design purposes. The overlapping problems are users' AI readiness, mitigating cognitive offloading, keeping the human-in-the-loop, and enabling users to learn how to best collaborate in the context of AI.**

## WHAT

*What was done? How was generative AI used?*

**Case 1:** *Exploration of using Generative Artificial Intelligence (GenAI), specifically ChatGPT, as a 'design assistant' in educational course design. A step-by-step approach was adopted in exploring how GenAI can be used to complete tasks like defining and mapping course intended learning outcomes (ILOs) across course activities and assessments.*

**Case 2:** *An executive UG course where students are encouraged to use GenAI tools to complete assessed tasks and reflect on the experience. Two workshops are also integrated into the course. The first focuses on prompt engineering and Code Interpreter, and the second centers on using generative AI in academic writing and argumentation. The assessment is a Group Design Project that demands cognitive skills ranging from understanding to evaluation of AI technologies and their practical application across various knowledge domains*

## CHALLENGE

*What challenges have you encountered in this work?*

- *There are various misconceptions of how LLMs and GenAI work, including capabilities, limitations or why hallucinations occur. This leads to misuse or a misunderstanding of how the tools can facilitate or augment human problem-solving strategies.*
- *Accessibility – perhaps, more Hong Kong specific – is an issue, given many tools are not accessible without a VPN or require subscription for more powerful versions. This creates an equity issue.*


## HOW (IMPACT)

*How is this creating an impact? What effects are you seeing? Are there unintended effects you are observing?*

- *Deeper understanding of how human-in-the-loop is interregal to successful use of AI. E.g., having pedagogical knowledge, or guidance in this domain, is very important when using AI for design purposes.*
- *Supporting evidence that students learning metacognitive skills is increasingly becoming important in the context of using AI*

# Enhancing Virtual Patients with Generative AI

## WHY




What do you usually eat?

Sorry I don't understand what you were asking.

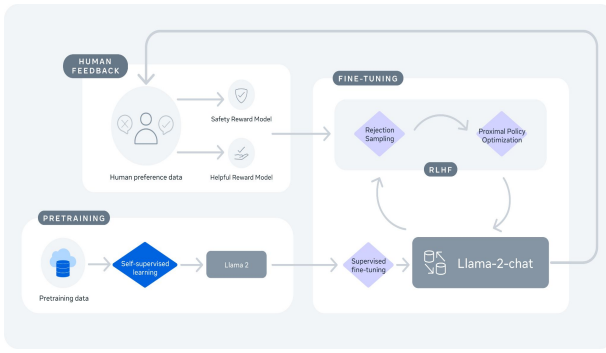
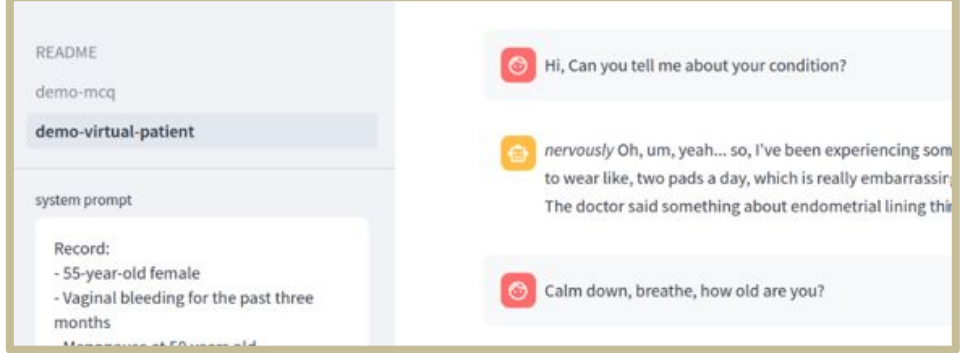
Red meat?

irrelevant

## WHAT



Realistic and Natural  
Diverse Scenarios

README  
demo-mcq  
demo-virtual-patient

system prompt

Record:  
- 55-year-old female  
- Vaginal bleeding for the past three months  
Menopausal at 50 years old

Hi, Can you tell me about your condition?

nervously Oh, um, yeah... so, I've been experiencing some to wear like, two pads a day, which is really embarrassing. The doctor said something about endometrial lining this

Calm down, breathe, how old are you?

## CHALLENGE

### Survey Evaluation

Virtual Patient

Criteria	Score
Responses based on original record without fabricating facts.	4
The system behave like an actual patient.	3.5
I can reach the final diagnosis.	4
Ratings of the test experience.	3.5
System improves from last test.	5
The system would benefit instructors and students for future use.	5

## HOW (IMPACT)

Curriculum Integration

Seeing is believing effect

Inter-faculty

\$\$\$

Equity and access

# Using AI to enhance learning and engagement in occupational therapy

## WHY

### *What is the problem the project addresses?*

- Prepare students for AI use in professional occupational therapy practice
- Bachelor of Occupational Therapy (second-year, second semester cohort) students with limited clinical experience
- Overwhelmed by assumed knowledge
- Post COVID-19 - noticeably reduced engagement, interaction and collaboration

## WHAT

### *What was done? How was generative AI used?*

- **Part 1 PRE-WORK** - Asynchronous short video of teacher professionally contextualising AI use. Embedded poll questions to gather student input and perceptions and check engagement.
- **Part 2 WORKSHOP ACTIVITY** - Short discussion in groups about the ethics, possibilities and limits of AI in Occupational Therapy
- **Part 3 WORKSHOP ACTIVITY** - Using Cogniti access to ChatGPT4 for ideas generation
- **Part 4 WORKSHOP ACTIVITY** - groups present their occupational therapy plan to AI Teacher simulation Mrs. S.

## CHALLENGE

### *What challenges have you encountered in this work?*

- Some students were initially hesitant to acknowledge any prior use of AI or identified they had limited experience, did not want to use it, or had some 'fears' around using it.
- We are very conscious of the responsibility to model and support the use of AI in a professional and ethical way. The consequences of any misinterpretation/misunderstanding of AI use are significant.
- On looking back on the transcripts of the interactions after class, some of the interactions with the generative AI were not in a professional manner or on task. For future iterations, we have built this into the prompting.

## HOW (IMPACT)

- Allowed students to practice discussing therapy plans in a simulated yet realistic scenario
- Explain their plans in teacher-friendly terms
- Ensure their plans were realistic
- Experience how teachers might react to what they are asking them to do
- Experience real time feedback
- Gain experience to prepare for clinical placement



# Designing an App with Gen AI to Aid the Writing Process

## WHY

*How to design an app that could use Gen AI to:*

1. *Have a positive impact on the writing process for students;*
2. *Enhance a constructivist learning environment.*

## WHAT

*A team of teachers and students from NTU designed the app, Waai, which uses Gen AI to coach students through brainstorming and revision during the writing process. The AI chatbot feature of the app, called “Nudgy,” is uni-directional; its interface, instead of simulating a “live” conversation, engages with students’ as they brainstorm and ideate about their topic.*

## CHALLENGE

- *To create an AI chatbot that would give students directions for revision and brainstorming without offering answers or generating writing that students might be tempted to cut and paste into their assignment.*
- *To design “backend” prompts that would anticipate student questions and offer feedback that would not overly influence a student’s writing.*
- *Allaying student anxiety with Algiarism*

## HOW (IMPACT)

- *Student ambivalence about AI prompts (appreciation for course specificity but dislike of overly controlled dialogue with AI)*
- *Students appreciate not being given answers but instead being given potential ideas to vet and look deeper into.*
- *AI modelling a way of considering associated concepts that students find helpful?*

# Elevating Learning Through Student-AI Co-creation of Educational Resources

## WHY



Engaging students in creating **novel content** (aka learnersourcing) promotes deep and higher-order learning.

However, students may lack the necessary **training or knowledge** to create high-quality content.



## WHAT



We created a **learnersourcing co-pilot** to provide real-time feedback to students, enhancing the quality of their contributions.



**AI-feedback on create** highlights current strengths and suggestions for improvement.



**AI-feedback on review** provides suggestion on improving peer feedback to be more detailed, actionable and constructive.



Based on over 6,000 student responses, 75% assigned a 4 or 5-star rating to the learnersourcing co-pilot.

## CHALLENGE



Difficulty in **prompt engineering** to achieve consistent and reliable results with minimal instances of AI **hallucinations**.



Need for **personalisation**, as high-achieving students consistently found the feedback to be less effective.



Development of intuitive **user interfaces** for seamless **human-AI collaboration** while holding humans accountable remains challenging.



There is a pressing need to conduct **large-scale experiments** to validate the benefits and identify potential side effects of AI adoption in learning environments.

## HOW (IMPACT)



Students viewed the learnersourcing co-pilot **positively**.

The co-pilot **improved the grammar and wording** of the learning resources and feedback



The effect of the co-pilot on **resource quality** and discipline-specific content remains to be studied.

# Supporting Faculty in the Design of Assignments that Invite Learners to Use Generative AI

## WHY

*Generative AI (GenAI) is new for most faculty. They need support to learn about the technology, its uses, and its impacts. GenAI is likely to be a tool that learners must master to be competitive in the workplace. It behooves faculty to teach learners to use this tool ethically, responsibly, and efficiently.*

*To address this need, in October 2023, a free, one-week, online faculty development course was developed and facilitated for post-secondary educators. As an open educational resource (OER), the course was adopted as adapted by some Canadian post-secondary institutions to help train their faculty.*

## WHAT

*The online course consisted of activities, demonstrations, and discussions, as well as two books: one to help educators learn about GenAI, and the other to introduce a 14-step framework for designing assignments that invite learners to use GenAI in their work. The book outlines are shown below.*

### Table of contents

1. What is AI?
2. What is GenAI?
3. GenAI Tools
4. Uses of GenAI in Education
5. Citing the Use of GenAI Tools
6. Concerns with GenAI in Education
7. Resources on GenAI
8. Experiment with GenAI
9. GenAI in Assessments
10. Using GenAI to Generate an Assessment

### Table of contents

1. Introduction
2. Check Policies
3. Consider your L.O.
4. AA - Overview
5. AA - Pick One
6. Define Your Assessment
7. Consider Scaffolding
8. Select a GenAI Tool
9. Engineer a Prompt (optional)
10. Introducing GenAI to Learners
11. Learner Meta-Cognition
12. Alternatives for Learners
13. Assessment of Learners' Work
14. Instructions for Learners
15. Monitor the Assessment

## CHALLENGE

*In a Canadian context, the laws regulating data privacy and security are more stringent than in other jurisdictions, so the course had to identify GenAI tools that are available in Canada that do not collect user data (so that learners could be directed to these tools in the assignments).*

*Also, since each institution has its own policies governing the use of GenAI in the classroom (and often each course has its own policy within one institution), it could be challenging to offer guidance on how to develop assignments where students are invited to use GenAI that would be helpful across institutions and course contexts.*

*Finally, GenAI was used to create examples, and they suffered from hallucinations in citing their courses. This provided an opportunity to discuss the issue of accuracy in the output of GenAI, but some of these inaccuracies were missed by the course designer before implementation.*

## HOW (IMPACT)

*Faculty from 91 post-secondary institutions registered for the course.*

*Most from British Columbia and Alberta (Canada)*

*One institution in Ontario (Canada) adopted the OER course to train their faculty in integrating GenAI into their assignments.*

# Data Insights for Student Learning and Support

## WHY

*What is the problem the project addresses?*

- *There is no reliable way to identify students at risk of failing early in a term*
- *This means students often miss opportunities to be helped until it is too late*
- *The university provides many academic and wellbeing support options at faculty and central levels but not all students and staff know about them*
- *This project can help identify students at risk very early in the term and connect them to the right support at the right time*

## WHAT

*What was done? How was generative AI used?*

- *UNSW is using machine learning to predict possible failure using multiple data sources*
- *AI is used as a means of interpreting data for presentation to staff and students in an easy-to-understand format*
- *It is also being used to generate personalised nudges and messages to students and staff*
- *It can draft messages for staff responding to specific risk factors of students, and suggests appropriate support aligned to the student needs and behaviours observed*
- *Academic and wellbeing support services knowledge and expertise has been codified into matrices that inform the AI personas, allowing it to modify its approach to message generation based on demographic, level of risk, type of issue, number of times a student has already been contacted*
- *Currently in pilot (84 subjects, 17,000+ students)*

## CHALLENGE

*What challenges have you encountered in this work?*

- *The IT infrastructure and architectural / cyber approval processes are not agile enough to cope with rapid advances in Ai technology. This is beginning to change however.*
- *There is much potential for the project to automate hundreds of manual processes across the university. It is difficult to keep in scope because of the opportunities it creates.*
- *Simplifying the user experience design has been challenging – the goal is no training required to use. Not there yet.*
- *Different academics have different levels of interest in the analytics, meaning we are managing many requests for customization.*
- *Surprisingly there has been little negative feedback about privacy or ethical concerns, but the team has worked incredibly hard to ensure these issues are continually dealt with transparently and with legal advice.*

## HOW (IMPACT)

*How is this creating an impact? What effects are you seeing? Are there unintended effects you are observing?*

- *Overwhelmingly positive response for the concept.*
- *Staff are reporting the tool as being useful – giving them previously unseen insights.*
- *Students are responding positively to have this type of feedback from the university.*
- *Support services are seeing great potential for automation*
- *Legal and ethical discussions have progressed to prepare university for future*

# AI in the Professions Relevant to Students

## WHY

*Different students have different ideas about what they want to do / their careers.*

*A typical course can include people who want to be fashion designers, some who wish to be lawyers, and others who want to be engineers, etc.*

*How can we show them how AI is relevant to all those professions?*

## WHAT

Step 1: Ask students  
What industry do you/have you worked in?  
What was your job role?  
What would you say that you “do”?

*Above examples good for grad students or students with work experience, if no work experience then might reframe as what do you want to do in the future*

Step 2: Instructor’s job is to find ways AI can contribute  
Design activities accordingly

Step 3: At least for a few minutes a week, take on one of these professions and show how GenAI affects it in class. Show fashion designers how GenAI can brainstorm, show want-to-be lawyers how GenAI can provide legal drafts, etc.

## CHALLENGE

- Difficult to constantly learn & use newest tech
- Should be coupled with classic readings from the discipline (whatever course you are teaching), find a connection – this can be a fair bit of work
- Letting students choose their approach obviously helps them but it creates work for you
- Very difficult to grade/mark beyond participation

## HOW (IMPACT)

*Students more engaged in class – material seems more relevant to their goals*

*Students see how GenAI can affect them or their peers, they have better insight into the future*

*Allows students to further calibrate the way they learn to use GenAI in their education, so they can carry those skills to professional life.*

# Application of AI in Education (powered by GPT): An undergraduate engineering course



## WHY

*What is the problem the project addresses?*

- Give students the opportunity to explore how AI can enhance teaching (Early 2023), learning, and management in educational settings, and get a solid understanding of how AI can be applied ethically and effectively to improve educational processes and promote more personalized and efficient learning.
- Learn as a instructors, as a Department, and as School how to work and learn with IA in our teaching

## CHALLENGE

*What challenges have you encountered in this work?*

- Significantly fewer challenges than in other similar teaching innovations. Students had high levels of motivation and autonomy.
- Little knowledge of product development that involves AI, APIs, and prompting engineering
- It was challenging to identify the key concepts that students need to master (e.g., neural networks, embeddings, reinforcement learning, LangChain, transformer). AI literacy?
- At some point, It was hard for engineering students to think from an IA perspective (i.e., they try to build it more than using it)

## WHAT

- A course for undergraduate engineering students that covers the theoretical foundations of AI, various applications in education, the design of AI solutions, and the ethical aspects involved.
- 18 students, 6 teams. 15 sessions of 90 minutes each.
- US\$20 for each team for the entire semester.
- Teaching team: A higher education, an AI expert, and 2 TAs.
- Assessment: Individual participation (30%) and team project participation (70%). Each team had three graded presentations; the last had a larger audience of engineering developers, businesspersons, and university staff.
- Each application had to be tested with actual students or university staff.

## HOW (IMPACT)

- High engagement and motivation throughout the course.
- The final prototypes surprised students, teachers, and administrators.
- We achieved advanced ethical discussions.



# TECgpt-portal – Our gateway to generative AI

## WHY

*What is the problem the project addresses?*

- *To make available generative artificial intelligence components that could be valuable for enabling multiple use cases in an organized, secure, private, sustainable, efficient, and governed manner for our entire institution*

## WHAT

*What was done? How was generative AI used?*

*We developed an institutional portal called TECgpt-portal which makes available to the community of our Institution generative AI capabilities based on our own framework called TECgpt mainly developed with Azure Open IA services using GPT 4 Turbo, Ada-002 and DALL-E 3 services, in addition of the use of cognitive services of text to speech and speech to text. TECgpt-portal is made up of four fundamental components:*

- *Component that allows you to use Chat gpt capabilities, but running within the institution's Azure infrastructure, which provides enterprise security and data protection capabilities.*
- *Component that allows the use of the language processing capabilities of GPT 4 on institutional knowledge bases by generating specific embeddings developed with Ada-002 and stored in the institution's high-performance databases (ChatTEC).*
- *Component for image generation based on descriptions using DALL-E 3 models*
- *Component that allows specific skills developed through prompting engineering to accelerate specific processes such as the generation of class projects, exams and quizzes generation, summaries of complex texts, generation of posts for social networks, among others.*

## CHALLENGE

*What challenges have you encountered in this work?*

*Among the main challenges we have faced for this enablement are the following:*

- *Lack of Expertise:*

*Developing solutions based on generative artificial intelligence requires an advanced set of technical skills and expertise, and currently, it is challenging to find professionals with such knowledge.*

- *Adoption and Acceptance:*

*Gaining acceptance and understanding from the academic community proves challenging due to varying levels of familiarity with these technologies. In many cases, advanced users tend to opt for other solutions available in the market.*

- *Development of Internal Policies:*

*Establishing clear internal policies and guidelines for the governed, ethical, and effective use of generative artificial intelligence and disseminating them throughout the institution.*

- *Rapid Technological Advancement:*

*Generative AI technologies and solutions are advancing rapidly, and part of the complexity lies in choosing which solutions can genuinely generate real and sustainable value for our institution.*

## HOW (IMPACT)

*How is this creating an impact? What effects are you seeing? Are there unintended effects you are observing?*

*The TECgpt-portal, based on TECgpt, has been instrumental in introducing generative AI-based solutions that serve as accelerators for the daily work of our community.*

*Additionally, the impact has been highly significant and observable in terms of improving the service experience by integrating the ChatTEC component into our virtual assistant, focusing on serving and assisting our audiences.*

# Prof Leodar – An RAG Study Buddy in NTU, MSE

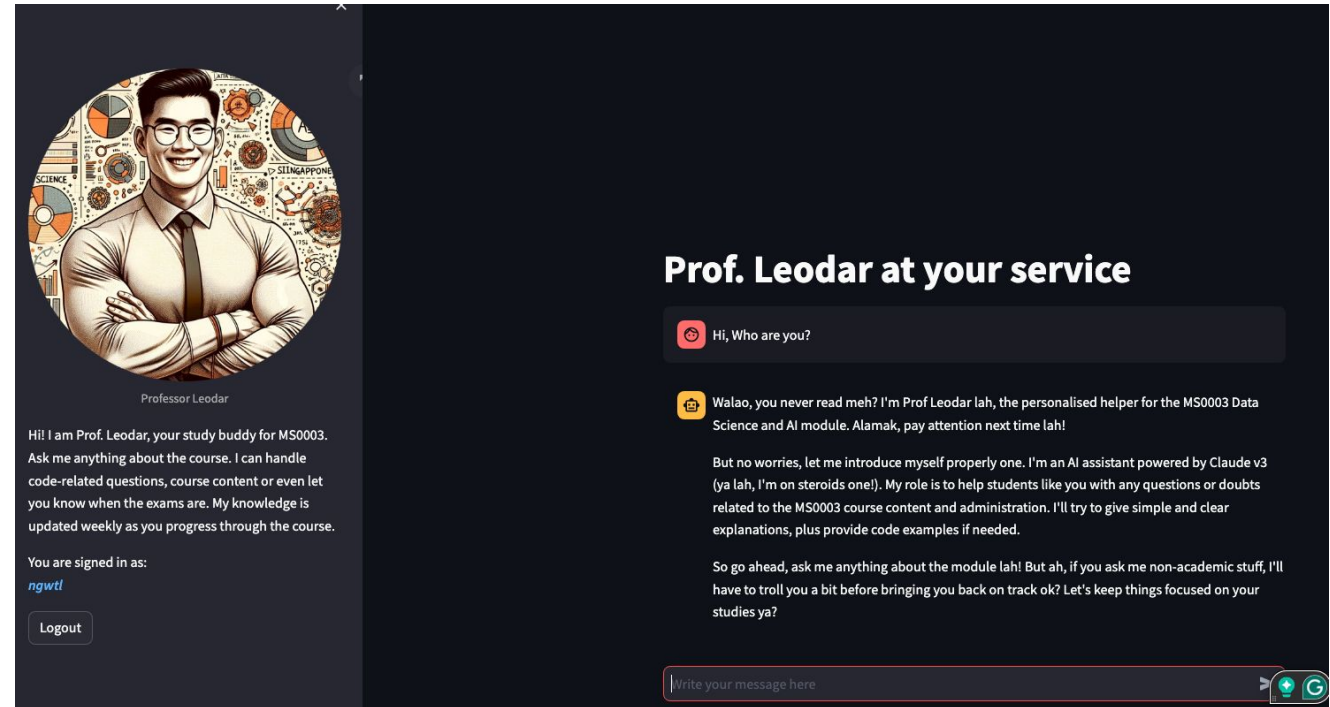
## WHY

*ChatGPT has disrupted higher education*

- *Students are copying answers that are long, irrelevant and verbose blindly to complete assignments..*
- *Better Answers but poorer learning*

## WHAT

*Prof Leodar  
A Retrieval  
Augmented  
Generation (RAG)  
Chatbot for  
personalized  
instruction.*



## CHALLENGE

*Why would Prof. Leodar be better than ChatGPT?*

*Prof. Leodar cannot just be more accurate, it must be faster too.*

*Issues with scaling exist (e.g., when too many students access it at one go)*

## HOW (IMPACT)

*How is this creating an impact? What effects are you seeing? Are there unintended effects you are observing?*

*Students are using and enhancing their learning. Exams have evolved to ensure that some portions are GenAI-proof. Student effectiveness studies underway.*



# Cogniti: An AI that teachers can steer

## WHY

*What is the problem the project addresses?*

- *GPT-4 is very capable but access is inequitable*
- *Poe and Zapier have looser privacy policies*
- *Copilot cannot be controlled and monitored by teachers*
- *Khanmigo is not steered by individual teachers*
- *None of these can be integrated with LMS*
- *Teachers need to trust AI*

## WHAT

*What was done? How was generative AI used?*

- *Built a bespoke platform, [cogniti.ai](https://cogniti.ai), to allow teachers to create their own AI 'agents'*
- *Leverage security, privacy, and safety of Microsoft Azure*
- *Teachers control AI agent behaviour and resources/knowledge*
- *Agents available to students via LTI into LMS*
- *Teachers can review anonymised conversations to check student misconceptions and AI responses*
- *AI functions as 'AI doubles' for teachers*

## CHALLENGE

*What challenges have you encountered in this work?*

- *Hitting Azure OpenAI tokens-per-minute limits*
- *Keeping up with demand from teachers and institutions*

## HOW (IMPACT)

*How is this creating an impact? What effects are you seeing? Are there unintended effects you are observing?*

- *So far: 395 agents created, 40 universities and schools piloting or on waiting list, 5,800+ users*
- *Improving feedback provision, student engagement, enabling new learning/assessment activities, saving teachers' time*

Annex 2:

Prototypes from the Creative Sandbox  
Workshop

# **PROTOTYPE CONCEPT**

**What is your prototype called?**

Gen AI based University Knowledge Connector (**GROUP 2**)

**Who is in your group?**

Mohsen Mohammadzadeh, Sergio Celis, Nathaniel Taeho Yu, Qin Liu

**Which university model does this apply to?**

Digital University Consortia  
Entrenched University

**What is the question you want to explore? What do you want to test?**

- How can we ensemble our disciplinary Body of Knowledge (books, assessments, videos, lectures) in different ways?
- How can we facilitate the connection among different disciplines to address/teach complex challenges?

**How would this prototype/test work?**

- From current videos and lectures (from cameras) we can get texts to generate summaries
- We should select a societal problem (e.g., climate change, urban planning, water shortages, flooding, ~extreme heating cities) and have the Connector to recommend different pieces of knowledge to teachers and student teams.
- Student motivation should drive the Connector across the knowledge network too.
- The Connector could work across different languages
- APRU can work as an institutional umbrella for collaboration
- Is the Connector restricted to a group of universities or going open to the world?
- The Connector should have a serendipity component to make unexpected connections.

**What are some ethical considerations we should take into account?**

- A challenge is the intellectual property (copyright) of each university
- What does intellectual property mean in the Gen IA era?
- How can we represent or give access to disadvantage communities to participate in the Connector?

**What is the value of doing this prototype? How do you see it informing a bigger picture around AI + unis? Uni policies?**

- A problem solving orientation to our teaching and research
- It implies a redefinition of intellectual property.

# PROTOTYPE CONCEPT

## What is your prototype called?

**(Group 4)**  
**Wholly Immersed, Story-based & Experiential (WISE): Immersive Cultural Training using Virtual Reality and Storytelling**

## Who is in your group?

- Andrea Kolb (UoA)
- Kelly Chan (Press Start Academy)
- Shen Yong Ho (NTU, INsPIRE)
- Lee Yew Kong (Uni Malaya)
- Rita Cui Ramos (Uni of Phillipines Open Uni)
- Vladimer Kobayashi (UP Mindanao)
- Michelle Banawan (Asian Institute of Management)

## Which university model does this apply to?

Community Learning Universities

## What is the question you want to explore? What do you want to test?

How might we develop/design a human-centered, value-based, ethical, culturally-responsive use of gen-AI to promote experiential learning that empowers students and is informed by the community?

(Who would be the client base?, Can this framework become a marketable product?)

## How would this prototype/test work?

Avatar "Physique" Design: [

- Voice and Visual Representation such that avatar should have human-like qualities in its appearance and voice, but without being overly realistic to avoid the uncanny valley effect. This creates a sense of familiarity and comfort for learners.
- Adaptive Emotion and Tone such that the avatar can modulate its tone and facial expressions based on the learner's emotions, fostering an empathetic and personalized interaction.
- allow the students to ask embarrassing questions without being embarrassed
- Inclusive Persona Library such that the avatar could adopt different personas that reflect diverse cultural backgrounds, values, and communication styles. It can adapt to different learning needs and societal values, ensuring the AI resonates with a wide range of learners.
- Context-Aware Interactions designed to handle culturally sensitive issues, reflect diverse viewpoints, and avoid biases. Its responses could be grounded in ethical frameworks (e.g., fairness, respect for privacy)
- Feedback Loop that makes the avatar provide learners with a way to report concerns, ask for clarifications, or share feedback to improve its responses and interactions.

Avatar "Soul" Technical specifications:

- Incorruptible and discerning AI (Cannot be corrupted; discerning AI)
- Personalization Engine which is made up of User Profiling and Learning Preferences: The avatar could create adaptive learning pathways by keeping track of the learner's preferences, learning speed, and prior interactions. This would allow for tailored content delivery and personalized guidance based on individual learning styles.
- Emotion Recognition where real-time sentiment analysis or emotion detection are incorporated from text or voice to help the avatar adjust its tone, content, or difficulty level based on the learner's emotional state.
- also has RAG-like features to supplement the training data and retrieve/have access to real-time data relevant to the scenarios

Real-world applications and scenarios:

- Healthcare Environments
- Cross-Cultural Interactions
- Social Work and Community Engagement
- Role-Playing for Educational Training

AI Uses:

- Collaborative project management tool, database tool, resource provider
- Moderator / Conflict resolution facilitator: How can AI help resolve workplace and community conflicts due to different reporting structure?
- Simulations, case studies, scenario-based interactives, gamification, persona building, project-based learning
- Guide/feedback

## What are some ethical considerations we should take into account?

- cultural respect
- privacy and confidentiality settings
- accuracy
- data sourcing
- benevolent /malevolent ai

## What is the value of doing this prototype? How do you see it informing a bigger picture around AI + unis? Uni policies?

- Wholesome, Intelligent, Sensitive and Ethical (WISE)

# **PROTOTYPE CONCEPT**

## **What is your prototype called?**

AI-driven Interdisciplinary Project Initiative (AI-PI) **(Group 5)**

## **Who is in your group?**

- Catherine
- Hector
- Melody
- Irwansyah
- Iwan Adhicandra

## **Which university model does this apply to?**

Research Collaboratories (Group 5)

## **What is the question you want to explore? What do you want to test?**

How to drive the initiative (AI-PI) for interesting topics that will be funded sustainably for long term?  
Aspects to cover: finding interdisciplinary team, managing the team, project feasibility prior to grant application to save people's money

## **How would this prototype/test work?**

AI-assisted preparation before grant applications:

- First, assemble a multidisciplinary team to develop AI models (LLMs) tailored to integrated datasets from various fields.
- Second, launch small-scale pilot projects to test and refine these models, ensuring continuous ethical oversight and practical adjustments.
- Finally, evaluate success through defined metrics and scale successful projects, fostering continuous learning and collaboration across disciplines.

Virtual Research Platform:

- Works are based on virtual research environment (VRE); coding and data sharing that can handle larger scale collaboration.

AI functions:

- Assess the feasibility of the research ideas, consolidate and generate new ideas
- Identify the missing experts; and invite for applications
- Assist in project management
- AI-assisted writing and literature review

## **What are some ethical considerations we should take into account?**

- AI reliability; human intervention is still needed
- Potential job replacement
- Concern from the funding agency; extent of AI use
- Data privacy and security
- IP and authorship assignment
- Comply with funding agency regulations on AI use
- Close AI - acceptance and trust

## **What is the value of doing this prototype? How do you see it informing a bigger picture around AI + unis? Uni policies?**

Prototyping the AI-driven Interdisciplinary Project Initiative (AI-PI) validates its feasibility and effectiveness, paving the way for AI to integrate diverse disciplines and drive innovative solutions to complex global challenges.

# PROTOTYPE CONCEPT

## What is your prototype called?

OneUni Alliance (**GROUP 6**)

## Who is in your group?

- Annie Prud'homme-Genereux, Simon Bates, Fun Siong Lim, Ann Tey, Danny Liu

## Which university model does this apply to?

Digital Universities Consortium

## What is the question you want to explore? What do you want to test?

How can unis work together and break down silos?  
How can we cross-list future-oriented courses curated across many universities?  
What are opportunities for shared course development/curation across institutions?  
How to enhance cross-module, cross-course, cross-institution collaboration?

## How would this prototype/test work?

- Shared course(s) across a group of institutions across APRU - targeting large intro classes
- Separate out functions of (course design and development), (delivery) and (summative assessment and credentials)
- Each function comprises a multi-institutional team of trusted / verified designers, assessors etc. including industry
- Course delivery is blended: online materials and formative exercises, with local in-person delivery sessions that can be tailored
- Course content is open licensed
- Final assessment may be either per-course or synoptic across multiple courses
- Supports mastery learning: in principle, you can challenge the assessment when you are ready
- Generative AI roles built in:
  - Logistics and management - coordinating course delivery at different institutions, timezones, people, etc
  - Personalized tutoring support to students
  - Student learning support - realtime analytics that adapts to student needs
  - Role in final assessment (not exactly figured that out)

## What are some ethical considerations we should take into account?

- Practical problem: getting faculty buy in ("I can do it better on my own")
- Resistance to decouple component parts of a course (eg delivery and assessment)
- Assessment by both humans and AI could be biased.

## What is the value of doing this prototype? How do you see it informing a bigger picture around AI + unis? Uni policies?

- Every institution teaches these courses: this would aim to do it *better* - better learning, more engaging, more personalized support to students (probably more than a single institution could mount at scale).

# PROTOTYPE CONCEPT

**What is your prototype called?**

**MedEval (Group 10)**

**Who is in your group?**

- Sabur
- Ping Yein
- Hayley

**Which university model does this apply to?**

Digital University Consortia

**What is the question you want to explore? What do you want to test?**

Can we do student assessment using GenAI?  
How well can genAI assess Medical Essay?  
Can GenAI accurately assess complex critical thinking skills and knowledge of students?

**How would this prototype/test work?**

- We will provide students with a case or scenario related to the course, the topic may involve clinical reasoning, clinical management, ethical issue, social and psychological issues.
- Students will be asked to write an analysis of the case in essay form with the help of GenAI tools. The help of GenAI tools may involve brainstorming the idea, grammar checking, reviewing literature etc, which can help improve students' critical thinking skill and their efficiency.
- We will use GenAI in evaluating and analyzing the students' written responses, providing insights and feedback on their performance.
- We will evaluate the knowledge of students and their understanding of the issue, and their use of evidence and supporting arguments in their written analysis. Also, their ethical reasoning and decision-making will be assessed in the grading
- Clear rubric to grade medical essay by GenAI.
- The evaluate of Gen AI is just for pregarde, we will keep "human-in-the-loop" and involve the lecturer in the final stage of the assessment process to validate the GenAI grading.

**What are some ethical considerations we should take into account?**

- Relying too heavily on GenAI to assist in all aspects of learnings.
- Clear policy and guideline about the use of AI. (specify that AI can be use for grammar checking and idea brainstorming but not for knowledge acquisition)
- Human in the loop to validate
- Ensure the assessment design in fairness and equity for all students.

**What is the value of doing this prototype? How do you see it informing a bigger picture around AI + unis? Uni policies?**

- To ease the lecturers burden and encourage human to human interaction for more constructive learning.
- More accessible - for remote learning and applicable globally
- Create better connectivity around the world.
- Allow more participants.
- Uni policies may need to be redefined to be both human and AI friendly.

## Annex 3

# Policy Implications and Policy Areas to Investigate from the Creative Sandbox Workshop



# Policy Implications and Policy Areas to Investigate from the Creative Sandbox Workshop

The emergence of generative AI compels universities to re-examine their policies and practices to ensure responsible and effective integration of this transformative technology. The following policy areas and recommendations were developed through our Creative Sandbox Workshop and require particular attention:

## Curriculum Development and Academic Programmes

- **Curriculum Agility and Responsiveness:** Universities must move away from rigid, slow-moving curriculum development processes to embrace more agile approaches that can adapt to the rapid pace of AI development. Workshop participants highlighted the need for:
  - Frequent curriculum reviews: Regularly evaluating curriculum content, identifying outdated material, and incorporating new developments in AI and related fields.
  - Modular content: Developing course components that can be easily updated and adapted to incorporate new AI tools and technologies.
- **Discipline-Specific AI Guidelines:** A single, university-wide AI policy is insufficient. Each discipline requires subject-specific guidelines that account for unique pedagogical goals and ethical considerations, including:
  - Explicitly defining acceptable and unacceptable uses of AI in coursework and assessment.
  - Addressing plagiarism concerns in the context of AI-generated content.
  - Providing guidance on the responsible and ethical use of AI tools specific to each field.
- **Interdisciplinary Learning and Student Agency:** Workshop participants recognized that AI's transformative potential lies in its ability to connect disciplines and foster innovation. Policies should encourage:
  - Interdisciplinary course design: Creating courses that explore the application of AI across multiple fields.
  - Flexible learning pathways: Allowing students to create individualized learning journeys, combining courses and modules from different disciplines to meet their unique goals.

- **Integrating AI Ethics and Critical Thinking:** Workshop discussions underscored the need to equip students with the critical thinking skills and ethical frameworks necessary to navigate an AI-driven world. Universities should consider:
  - Incorporating AI ethics discussions into existing courses across different disciplines.
  - Developing dedicated courses on AI ethics and responsible AI development.
  - Encouraging student research and engagement with issues related to AI bias, fairness, and accountability.

### **Student Support and Advising**

- **Shifting to Competency-Based Assessment:** Workshop participants advocated for a shift towards mastery-based learning models, leveraging AI to personalize assessment and support deeper learning. Policy changes might include:
  - Adopting flexible timelines for course completion, allowing students to demonstrate mastery at their own pace.
  - Using diverse assessment methods, including AI-powered simulations, projects, and portfolios, to evaluate student competencies.
- **Developing Ethical and Effective AI-Powered Support Systems:** Universities should explore the potential of AI to enhance student support services, while prioritizing ethical considerations. Workshop participants emphasized the need for:
  - Transparency in how AI is used in support systems.
  - Data privacy and security safeguards.
  - Human oversight to ensure fair and unbiased decision-making.

### **Human Resources and Faculty Management**

- **Defining Evolving Faculty Roles and Responsibilities:** Workshop discussions highlighted the need for universities to proactively define how faculty roles and responsibilities will change with the integration of AI. This could involve:
  - Providing clear communication about new expectations and opportunities for faculty in an AI-enhanced environment.
  - Offering professional development opportunities to equip faculty with the skills and knowledge to effectively use AI tools in teaching and research.
  - Revising workload policies to account for the additional time and effort required for AI integration.

- **Strategic Resource Allocation for AI:** Workshop participants stressed the importance of dedicating resources to support AI initiatives. Universities should consider:
  - Providing funding for institutional subscriptions to AI platforms and tools.
  - Creating funding streams to support faculty research and development related to AI.

### **Institutional Decision-Making and Governance**

- **Developing a Comprehensive AI Ethics and Governance Framework:** Workshop discussions highlighted the need for clear guidelines and policies to ensure responsible AI development and deployment. Key considerations include:
  - Data privacy and security: Protecting student and faculty data in compliance with relevant regulations.
  - Algorithmic bias mitigation: Rigorously testing and validating AI algorithms to prevent unfair or discriminatory outcomes.
  - Transparency and accountability: Promoting open communication about AI decision-making processes and ensuring accountability for AI-related outcomes.
- **Rethinking Intellectual Property in an AI-Driven Environment:** Workshop participants recognized the need to clarify intellectual property rights in the context of AI-assisted research and content creation. Universities might consider:
  - Developing guidelines for attributing authorship and ownership of AI-generated research outputs.
  - Exploring new models for collaborative IP ownership in a multi-institutional, AI-driven context.