Integrating Artificial Intelligence in Business Education

INTEGRATING ARTIFICIAL INTELLIGENCE IN BUSINESS EDUCATION

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MANYA MALIK AND AKANKSHA NEHETE

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Part IV. Resource Repository

INTRODUCTION

Welcome! We are excited to be on this learning journey with you.

The resource will be a comprehensive guide on how business educators, staff, and students can use Artificial Intelligence tools to actively transform the way business education is delivered and experienced. The interactive e-book will integrate a blend of foundational knowledge and practical applications of AI in business education.

Intended Learning Objectives

1. Possess a robust understanding of the functionalities and potentials of AI tools.
2. Be able to integrate AI tools into course design and delivery, enriching the learning experience.
3. Employ strategies to ensure that AI use remains diverse, equitable, and inclusive.
4. Be equipped to create business cases that resonate with real-world challenges, fostering a more applied and relevant student learning experience.

A Note on Navigation and Accessibility

This course is built in Pressbooks, an open-access educational platform supported by eCampus Ontario. To navigate throughout this course, you should familiarize yourself with these features:

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We have made every effort to ensure this course is accessible to all possible learners. This includes making use of:

- closed captions on all videos
- alternative text on images, graphics, and other media
- high contrast colours and fonts
- accessible formatting for headings, tables, and other HTML features

If you have any accessibility needs that we have not included, please reach out to DeGroote's Teaching and Learning Services team at dsbEdDev@mcmaster.ca and we would be happy to accommodate these requirements to the best of our ability.

COURSE AUTHORS AND CONTRIBUTORS

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Jay Dell is a Digital Media Specialist with the Teaching and Learning Services team. He graduated with honours from Seneca College and brings years of relevant experience to the team. With his advanced knowledge in video production, he can bring your vision to life and assist with every step from pre-production to post-production. Before joining DeGroote, Jay worked for Wilfrid Laurier University and brings advanced knowledge of digital media on online learning platforms as well as interactive instructional media objects and videos.

Irina Ghilic, Ph.D. (she/her) – Subject Matter Expert, Content Writer, and Developer

Dr. Irina Ghilic is a Learning Experience Designer on the Teaching and Learning Services team at DeGroote School of Business, McMaster University. With over twelve years of experience designing, developing, and promoting quality culture for teaching and learning in education, Irina has a diverse skill set in curriculum design, educational development, learning research, creative problem solving, strategic planning, and project management. Irina's work practice intersects inclusive design, cognitive science, and the use of technology in education, and her doctoral dissertation focused on cognitive offloading, note-taking, and identifying the gaps between applied research and inclusive learning design. As a Learning Experience Designer, Irina explores a learner's entire journey and creates human-centric solutions that go beyond the traditional boundaries of instructional design. Her ongoing work with educators and learners is driven by accessibility practices, research-based outcomes in teaching and learning, and digital learning development practices.

Amy Pachai, Ph.D. (she/her) – Subject Matter Expert, Content Writer, and Developer

Dr. Amy Pachai is an Educational Developer on the Teaching and Learning Services team at DeGroote School of Business, McMaster University. Since joining DeGroote, she has worked with instructors, staff, and students to create and execute an innovative new blended learning MBA program for working professionals, launched in Fall 2018. Now, she supports the faculty and staff across DeGroote on their courses and programs from design through to feedback and continuous improvement. Prior to this role, her doctoral research explored ways to reduce mind wandering and improve learning. Amy has facilitated workshops for diverse audiences on topics such as creating effective assessments, maximizing the impact of your LMS, design thinking, scientific writing skills, business communication, and study strategies for students. Through these experiences, she has experimented with many tools and techniques to foster engagement, improve comprehension, assess learning, and promote collaboration.

ACKNOWLEDGEMENTS

Land Acknowledgement

As settlers on this land, we have an important responsibility to acknowledge the grounds on which we are privileged to work in the pursuit of higher education. We are gratefully submitting this resource to you from the traditional territories of the Haudenosaunee, Mississauga, Mississaugas of the Credit First Nation, Anishinabek, and Adiwonderonk peoples.

As we learn about the traditional territories upon which we reside, let's ask ourselves: how might we support indigenous communities? We can start by reviewing the Calls to Action from the Truth and Reconciliation Commission of Canada for ways in which we all are called to reconciliation.

Visit the **Native Land Digital Map** to learn about the traditional territories upon which you reside.

Funding Acknowledgement

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PART I
FOUNDATIONS OF GENERATIVE AI

HOW DID AI EVOLVE TO THIS STAGE?

> Despite their brief history, computers and AI have fundamentally changed what we see, what we know, and what we do.
>
> Little is as important for the future of the world, and our own lives, as how this history continues.
>
> – Max Roser

Artificial Intelligence (AI) didn't happen overnight. It has a vibrant history.

Please scroll through the timeline below to see the various points of its evolution.

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https://ecampusontario.pressbooks.pub/aiinbusinesseducation/?p=28#h5p-13

Before we go too deep into AI, a useful glossary of terms can be found here. *(Link opens in a new tab)*

So unless you're living under a rock you must have noticed that the digital world has changed dramatically. This becomes clearer as you notice how even recent computer technology feels ancient these days. Not long ago in the '90s cell phones were the size of bricks. In this short time, computers and devices have evolved so quickly and have become such deep-routed parts of our daily lives that it's easy to forget how new this technology is. Only about eight decades ago were the first digital computers invented.

Computers and AI have changed our world immensely, but we are still in the early stages of this history. Because this technology feels so familiar, it is easy to forget that all of these technologies we interact with are very recent innovations and that the most profound changes are yet to come.[1]

Below is a great brief introductory video *(Link opens in a new tab)* from Duke University that will help to familiarize you with some of the AI that you may already be using.

> *One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/aiinbusinesseducation/?p=28#oembed-1*

Artificial intelligence has already changed what we see, what we know, and what we do. This is even though this technology has had only a brief history. There are no signs that these trends are hitting any limits anytime soon. On the contrary, particularly over the last decade, the fundamental trends have accelerated: investments in AI technology have rapidly increased, *(Link opens in a new tab)* and the doubling time of training computation has shortened to just six months.[2]

Generative AI (GenAI) is a type of artificial intelligence that specializes in generating new content such as music, text or images. Unlike other AI models that are designed for classification or prediction tasks, GenAI aims to produce unique outputs that resemble human-created content. This technology is capable of creating original and creative outputs.

It offers users a wide range of outputs, providing diverse and unique results. This enables the creation of new and unexpected content, expanding the spectrum of possibilities. With continuous training and fine-tuning its performance and output quality will lead to improved results.

GenAI uses unsupervised learning methods to learn from datasets that are unlabeled and have no predefined outcomes. By identifying patterns within the data, the model generates content. This approach does not require any specific target or goal to be set beforehand. In simpler terms, GenAI learns on its own and creates content based on what it has learned from the data. Overall, generative AI represents a significant advancement in the field of artificial intelligence, offering endless possibilities for creative applications and innovation.

All major technological innovations lead to a range of positive and negative consequences. This is already true of artificial intelligence. As this technology becomes more and more powerful, we should expect its impact to become greater still.

[1]Max Roser (2022) – "The brief history of artificial intelligence: The world has changed fast – what might be next?" Published online at OurWorldInData.org. [Online Resource]

[2]Roser, Max. "Artificial Intelligence Has Advanced Despite Having Few Resources Dedicated to Its Development – Now Investments Have Increased Substantially." *Our World in Data*, 28 Dec. 2023

WHAT IS GENERATIVE AI IN BUSINESS EDUCATION CAPABLE OF?

> **"AI can not only boost our analytic and decision-making abilities but also heighten creativity."**— HARVARD BUSINESS REVIEW

Generative AI Is Reshaping Business Education as we know it

Generative AI (GenAI) *(Link opens in a new tab click to find out more on this subject)* is revolutionizing the way we learn about business.

By leveraging advanced algorithms, GenAI can create content, simulate business scenarios, and provide personalized learning experiences.

But what exactly is it capable of in the realm of business education?

Understanding Machine Learning in Business

Machine Learning (ML), *(Link opens in a new tab click to find out more on this subject)* a subset of AI, involves using algorithms and statistical models that enable computers to improve their performance on a specific task with data, without being explicitly programmed.

In business education, ML can be used to analyze consumer data to predict trends, personalize marketing campaigns, and optimize supply chains.

AI Can Simulate Business Scenarios

Artificial Intelligence (AI) *(Link opens in a new tab click to find out more on this subject)* can simulate complex business scenarios, which can be invaluable for students to understand the dynamics of business environments.

AI models can replicate market conditions, consumer behaviour, and even competitive business strategies, providing a dynamic learning tool for business education.

Have a Look at this video from IBM *(Link opens in a new tab)* about how Generative AI can be used in Business

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🤖 Generative AI and Customized Learning Materials

GenAI can tailor educational content to the needs of individual students.

For instance, a GenAI system might generate practice problems for a finance course that are aligned with a student's learning pace and style.

Example: A business school uses GenAI to create custom case studies that adapt in complexity based on the student's progress.

🌐 Preparation for the real-world environments

With GenAI, students can explore business concepts preparing them for the real-world environment. GenAI tools can generate examples and review large documents in preparation for discussions and meetings, enriching the learning experience.

Organizing a Class Discussion

(*developed for MGMT 400 Organization Theory*)

Rationale for this assignment. In MGMT 400 Organization Theory, I use group-led discussions to promote class conversations about the course topics. Students are organized into teams, and then teams are assigned to facilitate a discussion on topics from our textbook. As part of that task, students are also responsible for identifying the major themes in their section of the

textbook, developing a set of discussion questions to use during class, and producing a one-page summary

of their part of the textbook. Students are often challenged and intimidated by

this task, and are afraid to attempt to identify themes; they are also not always effective in generating good discussion questions that other students will respond to. This assignment proposes to have students use ***generative AI tools like ChatGPT*** to help them identify major themes in the text and effective discussion questions.

Purpose: A common professional activity is to review large documents in preparation for discussions and meetings. Part of this process is the identification of major themes in those documents and the creation of discussion questions to help you understand them better. The purpose of this assignment is to help you determine the major concepts and themes from the portion of the textbook that you are responsible for discussing and to develop a range of discussion questions that you can use to facilitate that discussion. You will also become familiar with summarizing a text for distribution to others.

Skills:

• Students will demonstrate the ability to use generative AI tools to help identify the major themes in a work of text.

• Students will demonstrate the ability to use generative AI tools to help summarize a work of text for discussion participants.

• Students will demonstrate the ability to use generative AI tools to create a variety of discussion questions that will be used to facilitate class discussion on a work of text.

Knowledge:

• This assignment will help you develop an understanding of a text.

•This assignment will also help you develop the ability to facilitate a discussion.

Tasks:

• Familiarize yourself with generative AI tools. Before the day of the discussion, you should work with a generative AI tool to familiarize yourself with the process of identifying insights about the text you want to use.

• You will likely find that effective use of an AI tool requires an interactive process...you may need to have a "conversation" with the tool to get the best output.

• You have to ask the AI tool questions to create any output from the system.

• Your instructor may also have a particular tool that you should use, or you may have to find your own. AI tools that will be effective for this assignment include ChatPDF, TLDR, and Bing (*these will allow you to interact with your text and ask the tool questions about it*).

Use the generative AI tool.

Using the AI tool, interact with it to help you understand the text better. You may not get ideal results on initial use of the AI tool...they are interactive tools, so you must ask it questions to develop the most effective outputs; these questions are called "prompts". You should document the prompts that you use to generate your output (*your instructor may want you to turn those in after the discussion*).

• Identify major themes.

• Identify discussion questions.

• Create a one-page summary. Based on the AI's output, create a one-page summary that includes the information that you found interacting with the AI.

• Use summary document to facilitate discussion. Distribute your one-page summary in class and use it and the discussion questions you developed with the AI tool to facilitate class discussion.

🛠️ Hands-on Experience with The Evaluation of AI

GenAI can generate answers and responses to multiple real-world scenarios however it's not perfect and by using critical thinking to correct the responses, this allows students to gain practical experience with the technologies that are shaping the future of business.

Quiz Essay Questions Incorporating Use and Evaluation of AI

Discipline: General Business Management, Business Strategy

Description: I have submitted 2 module quiz essay questions. One question requires the use of AI to generate the answer in the timeframe allotted and the other essay question gives students an AI-generated answer that they need to fix. The students will have practiced similar questions during in-class activities so that they can identify that Generative AI is useful but not perfect. They still need to do their critical thinking. Students tend to use ChatGPT or Perplexity in my classes. Each of the example questions is from a pool of similar questions but with different scenarios.

Assessment Content

QUIZ EXAMPLE

Welcome to the quiz for Module 4.

You must demonstrate competence in applying the concept of strategic planning and performance management to a company. It is expected that before you begin the quiz you have completed the learning activities in Modules 1-3.

You will have 120 minutes to complete each essay question.

Your answer must reflect your own abilities and you may not receive help from a human during your quiz. You are expected to give your best answer and an incomplete attempt will not receive credit.

Acknowledgement of AI tools Usage. *You may use AI to help you in the process of completing the assignments in this course but if you submit the AI output as your own work, then it is considered Academic Misconduct. You are also responsible for verifying all the outputs.*

Acting with integrity means that if you use any AI tools for either the idea generation (e.g. ChatGPT) or to improve your writing (e.g. a paraphrasing tool like Quilbot) then you should be transparent about what AI you used and how. This transparency will allow us to evolve the conversation about ethics and integrity expectations for class and industry.

Include this acknowledgement with your references.

Quizzes in this course will not be graded in the typical "point" fashion. Instead, each essay question in the quiz will be graded on a competence demonstrated/failure as outlined below.

10/10 = Demonstrates competence. Excellent. Answers all parts of the question accurately. Clear communication shows competence with this topic at first reading. Includes references. Shows you would be able to use this skill with minimal supervision in the workplace.

7/10 = Meets expectations of basic competence. "Good faith" attempt at all parts of the question but additional guidance would be needed to be able to meet expectations in the workplace. Includes references.

0/10 = Does not demonstrate competence. Partial understanding is evident but significant gaps remain. Would not be able to complete this assignment independently in the workplace. Needs better communication. Additional reading and module review are required. (You may redeem a token to resubmit after you have reviewed the topic and instructor feedback, if no second attempt is made then it is a 0% grade.)

By starting this quiz you are agreeing that you understand that these quiz questions are protected by copyright and are the intellectual property of {name removed for confidentiality}. You may not share the questions on this quiz with anyone or for any purpose. Taking photos, saving or sharing copies of these questions is a violation of the Academic Integrity Policy.

Question 1:

ChatGPT4 has created the balanced scorecard for Tim Horton's. However, the CEO is highly skeptical that an AI tool can understand the vision and values of the company. Your task as the business analyst is to carefully examine each goal to make sure it aligns with the strategy of the company. You must use information found on the official company website and any reports (e.g. Annual Report) published by the company.

Submit the following in your answer:

1. Revised SMART goals in each section with an explanation of why each edit was necessary based on specific company data you found. If no revisions are necessary, then explain which data supports the AI-generated goal. Provide links to the specific data.
2. Pick one of the goals and explain how you think the manager responsible for that goal

should keep track of progress between now and the deadline. Be as practical as possible.

ChatGPT4 created goals:

- Financial Perspective: Increase franchise revenue by 8% within the three fiscal years by expanding into untapped markets.\
- Customer Perspective: Enhance drive-thru experience and satisfaction by 10% over the next year through implementing an improved ordering system.\
- Internal Process Perspective: Reduce food waste by 20% within the next 18 months through accurate demand forecasting.\
- Learning and Growth Perspective: Improve leadership development scores by 12% over the next fiscal year through a comprehensive management training program.

Question 2:

Academic Integrity,

- Double-check that you have added the sources of information (weblinks are okay) into the body of your answer and not just at the end so that it is easy to match specific information in your answer with a specific source.
- You complete an AI Use Acknowledgement by answering the following question. Remember, you (not AI) are the author and are responsible for the accuracy of the information you submit.

How did you incorporate AI-generated content into your answer on this knowledge check?

Select the answer that is the best description.

- I input the quiz question and used the first AI-generated response without any modifications.
- I input the quiz question and used the first AI-generated response without any modifications.
- I iteratively refined the input prompt until the AI-generated response met my expectations. Then submitted the response.
- I iteratively refined the input prompt until the AI-generated response met my

expectations. Then I revised it for accuracy.
- I relied on AI-generated content to check the accuracy of my understanding of the module topic.
- I researched and wrote my answer and then used AI to edit for grammar, spelling, and formatting.
- I didn't use any AI tools to write my answer.

Question 4

Food Truck Business

You are expected to use AI to help you generate your answer or you won't finish in time. However, you are responsible for making sure the answer is accurate and matches the course material since it is a reflection of your competence. AI doesn't know exactly how the topics were covered in this course so you need to guide AI in the chat. Also, you will need to verify information to make sure it's logical for the particular size and scope of the business. The scenario is based in Calgary.

Scenario*:

Peter, a highly skilled chef, has spent the better part of his career dazzling patrons at high-end restaurants across the city. He has mastered the art of blending flavours and presenting them in a manner that delights both the eyes and the palate. Now, Peter dreams of a venture that will bring gourmet cuisine out of the confines of plush restaurants and into everyday life. He envisions launching a food truck business that combines culinary sophistication with the affordability and accessibility of street food. As part of his business planning process, he aims to create a Business Model Canvas to map out the key elements of his business.

He only has access to $150,000 to begin so he will keep it small to start but he needs to generate a profit quickly.

Task:

Your task is to assist Peter in creating a comprehensive Business Model Canvas for his food truck business. For each of the nine components provide an appropriate answer and explain

why you made those choices. For example, you can write his value proposition and explain how it matches his vision or mission statement. You would also include the statement.

Your answer must demonstrate a clear understanding of the individual elements of the business model canvas and how they interrelate. In your explanations, make sure you show that you include any details that are relevant to the strategic planning process but might not be explicit in the business model canvas.

Submission Requirements:

1. Completed Business Model Canvas. Upload a completed template (typed or a photo of a handwritten one).
2. Explanations for each element to show that the choices were strategic. Make sure you include the topics covered in Modules 1-3 and in class. Each explanation should be one paragraph or less.
3. Which information from the strategic planning process do you think is still missing? Explain how important you think it is to get these decisions made before launching the business.
4. List all AI tools that you used and how you used them.

*This scenario is fictitious and created by ChatGPT4

Question 5

Academic Integrity

- Double-check that you have added the sources of information (weblinks are okay) into the body of your answer and not just at the end so that it is easy to match specific information in your answer with a specific source.
- You complete an AI Use Acknowledgement by answering the following question. Remember, you (not AI) are the author and are responsible for the accuracy of the information you submit.

How did you incorporate AI-generated content into your answer on this knowledge check?

Select the answer that is the best description.

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- I iteratively refined the input prompt until the AI-generated response met my expectations. Then submitted the response.
- I iteratively refined the input prompt until the AI-generated response met my expectations. Then I revised for accuracy.
- I relied on AI-generated content to check the accuracy of my own understanding of the module topic.
- I researched and wrote my answer and then used AI to edit for grammar, spelling, and formatting.
- I didn't use any AI tools to write my answer.

📊 Data-Driven Decision Making

GenAI tools can analyze large datasets, helping students learn how to make informed decisions based on data analytics.

Example: A GenAI system processes market data to help students identify trends and make investment decisions in a simulated stock market game.

The integration of AI in business education presents numerous opportunities for enhancing the learning

experience and transforming the way we approach teaching and learning in this field. With the help of AI, educators can leverage data-driven insights to personalize instruction, develop a more effective curriculum, and engage students in new and innovative ways. As AI continues to evolve and become more sophisticated, it is expected to play an increasingly significant role in shaping the future of business education.

"Generative AI." *Generative AI*.

"Machine Learning, Explained | MIT Sloan." *MIT Sloan*, 21 Apr. 2021.

"What is Artificial Intelligence (AI)? " | *IBM*. (n.d.).

Patrick Schultz. "Organizing a Class Discussion" (2023). *AI Assignment Library*. 38. Licensed under a Creative Commons Attribution 4.0 International License.

Martin, Heather. "Quiz Essay Questions Incorporating Use and Evaluation of AI." *Generative AI and Assessment*,

STRENGTHS AND WEAKNESSES OF GENAI

Examining GenAI's Dual Nature

Did you know that Generative AI (GenAI) can be a game-changer in creative tasks but may struggle with context-specific nuances? Let's dive into the strengths and weaknesses of GenAI across various tasks. AI can simulate business scenarios that would take humans years to experience. This fascinating capability is one of the many ways AI is revolutionizing business education. But as with any technology, there are both strengths and weaknesses to consider.

Let's first have a look at this video from Eye on Tech *(Link opens in a new tab)* which goes into some of the most common Strengths and weaknesses.

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One of the most significant strengths of AI in business education is its ability to tailor learning experiences to individual students. AI algorithms can adapt to a learner's pace, style, and preferences, providing personalized resources and support that can enhance understanding and retention.

So let's now have a look at this interactive book which gives more examples of Strengths and weaknesses

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AI in business education offers a blend of strengths and weaknesses that educators and institutions must carefully balance. While the benefits of personalized learning and data-driven insights are clear, the challenges of maintaining a human touch and ensuring ethical use of technology cannot be overlooked. As AI continues to evolve, it will be crucial to address these weaknesses to fully harness its potential in shaping the future of business education.

ETHICAL CONSIDERATIONS

Understanding Ethical Considerations of AI in Education

Did you know that AI systems can inadvertently perpetuate biases present in their training data, leading to unfair treatment of certain groups? This is just one of the many ethical challenges that business schools must address when integrating AI into their curricula.

As we integrate artificial intelligence into various sectors, including education, we must navigate the complex terrain of ethics to ensure that these powerful tools are used responsibly.

let us have a look at this video from Bernard Marr *(Link opens in a new tab)* on the biggest ethical challenges for AI.

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Key Ethical Principles

- **Transparency**: AI systems should be transparent in their operations, allowing users to understand how decisions are made.
- **Accountability**: There should be clear lines of accountability for AI systems, ensuring that individuals or organizations are responsible for the outcomes of AI applications.
- **Fairness**: AI should be free from biases that can lead to discrimination against certain groups of people.
- **Privacy**: AI must respect all individuals' privacy, safeguarding personal data against unauthorized access and misuse.
- **Security**: AI systems must be secure from external threats that could compromise their integrity or the data they handle.

Case Studies and Scenarios

Imagine a scenario where an AI-powered grading system is introduced to a business school. While it may increase efficiency, questions arise:

- Is the AI fair to all students regardless of background?
- How transparent is the algorithm in determining grades?
- What measures are in place to protect students' data?

Strategies for Ethical AI Use

- **Developing Ethical Guidelines**: Institutions should create comprehensive ethical guidelines for AI use that align with their values and mission.
- **Inclusive Design**: AI tools should be designed with input from a diverse group of stakeholders, including students, faculty, and IT professionals.
- **Bias Mitigation**: Regular audits and updates should be conducted to identify and mitigate biases in AI systems.
- **Data Governance**: Establish clear policies for data collection, storage, and usage that comply with privacy laws and ethical standards.
- **Continuous Education**: Offer workshops and training for faculty and students on the ethical implications of AI.

Strategies in the Classroom for Ethical AI Use

In the next chapter, you will learn about Learning Experience Design with AI. One of the First Steps in LXD is Research. When you or your students research while using AI Consider principles such as transparency, fairness, privacy, and accountability. Refer to resources such as the OECD Principles on AI (Link opens in a new tab) and the UN's Universal Declaration of Human

Rights. *(Link opens in a new tab)* According to the World Economic Forum "instilling human rights ideas as a foundation of AI practices helps to establish moral and legal accountability, as well as the development of human-centric AI for the common good." ("9 Ethical AI Principles for Organizations to Follow" *(Link opens in a new tab)*).

Next, you should develop strategies based on that research, and develop strategies for ethical AI use in the classroom. These strategies should promote understanding and applications of ethical AI principles in a business context. It would be good to Provide real-world examples to illustrate each strategy. These examples can be from existing businesses, case studies, or hypothetical scenarios.

Afterwards, reflect on the importance of linking ethical AI principles to human rights and organizational values. How can these links contribute to more ethical and responsible AI use in business?

Challenges in Upholding AI Ethics

Despite best efforts, challenges persist in maintaining ethical standards:

- **Complexity of AI Systems**: The intricate nature of AI algorithms can make transparency difficult to achieve.
- **Rapid Technological Change**: The development of AI often outpaces the creation of ethical guidelines and regulations.
- **Diverse Cultural Perspectives**: Global educational institutions must navigate varying cultural norms and values related to AI ethics.

Real-world examples of why it's important to have ethical AI

Scrutinizing Bias and Fairness

AI systems are only as unbiased as the data they are trained on. For instance, Amazon had to scrap an AI recruiting tool *(Link opens in a new tab)* because it showed bias against women. The algorithm had learned from historical hiring data, which was skewed toward male candidates. Business schools must teach students to critically examine datasets for biases and understand the implications of deploying biased AI systems in real-world scenarios.

Data Privacy and Security

With great power comes great responsibility. The Cambridge Analytica scandal *(Link opens in a new tab)* is a stark reminder of how data can be misused. AI systems often require vast amounts of data, which can include sensitive personal information. Business schools have to instill in students a strong understanding of data privacy laws, such as GDPR, and the ethical handling of data.

AI Transparency and Explainability

AI can sometimes be a black box, making decisions that even its creators can't fully explain. The European Union's GDPR *(Link opens in a new tab)* introduced the right to explanation, where individuals can ask for the rationale behind an AI decision that affects them. Business schools should highlight the importance of developing transparent AI systems that stakeholders can trust and understand.

Global Ethical Standards

Ethical AI usage doesn't have a one-size-fits-all solution, as cultural norms vary widely. For example, China's social credit system, *(Link opens in a new tab)* which uses AI to monitor citizens' behaviour, may be seen as a severe privacy invasion in other countries. Business schools need to prepare students to navigate the complex global landscape of AI ethics.

Stakeholder Impact and Responsibility

The deployment of AI can have far-reaching impacts on employees, customers, and society at large. When Microsoft's chatbot Tay *(Link opens in a new tab)* was released on Twitter, it quickly learned to spout offensive language from interactions with users. Business schools must teach future leaders to consider the broader societal implications of AI and their responsibility towards all stakeholders.

Responsible Innovation

Innovation should not come at the cost of ethical considerations. Google's Project Maven, *(Link opens in a new tab)* which aimed to improve drone strike accuracy using AI, raised ethical concerns and led to employee resignations. Students must understand that responsible innovation involves weighing the benefits of AI against potential ethical and moral costs.

The management of AI in higher education is a continuous process that requires a long-term commitment. Educational institutions must create an atmosphere that promotes ethical awareness and proactive management to ensure that AI is used to enhance education rather than harm it. As we explore the potential of AI, it is important to consider its ethical implications and use it responsibly.

Artificial Intelligence – *OECD*.

United Nations. "Universal Declaration of Human Rights | United Nations." *United Nations*.

"9 Ethical AI Principles for Organizations to Follow." *World Economic Forum*, 2 July 2021.

PART II

DESIGN & DEVELOPMENT USING AI

LEARNING EXPERIENCE DESIGN USING AI

"**Learning experience design** is the process of creating learning experiences that enable the learner to achieve the desired learning outcome in a human centered and goal oriented way."

– Niels Floor, This is Learning Experience Design

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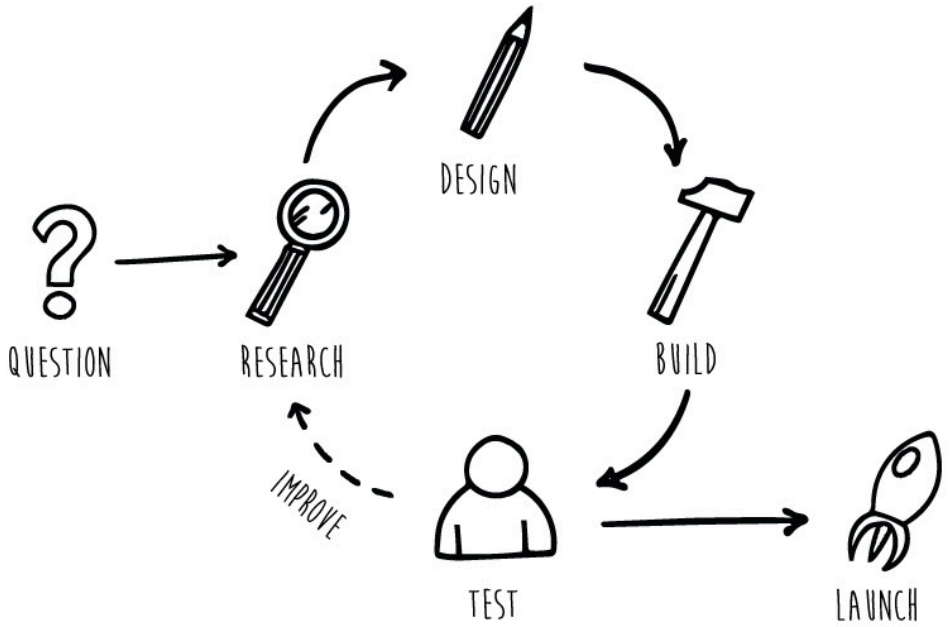
It's clear that Learning Experience Design is a powerful process for creating effective, personal, engaging learning experiences. In these next sections, we'll talk about how we can use generative AI to support the implementation of some of these learning experience design principles to make it easier, faster, and more effective for you!

How might we approach the practice of Learning Experience Design?

The process of Learning Experience Design (LXD) can be captured by the image below, showing the iterative approach to creating solutions for teaching and learning challenges. We may be wondering, "how might we create engaging case study discussions amongst undergraduate business students?" or "how might we teach time management and prioritization to budding entrepreneurs?". LXD provides us with steps to approach these questions that centre our learners and their goals and experiences.

Source: LXD.org



Let's take a look at each step of this process and consider how AI may be able to support our efforts.

Question

Identifying the focus of our efforts requires your discretion and insights as a learning experience designer, instructor, or other educational role – this is a human endeavour!

One way that we can use AI to inform our decisions could be to run any written feedback you have received from learners into an AI tool like ChatGPT and ask for prominent themes. This exercise may help identify patterns that could be the target of your efforts.

Research

Compiling research on a topic from various perspectives is a strength of generative AI and one you can leverage to save time in this process. Ask your generative AI tool of choice to provide a list of resources for you to explore. One specialized tool for this purpose, ResearchRabbit.ai, can curate relevant collections of research articles and provide helpful visualizations to understand the themes of these articles.

It's important at every stage of this process to employ a critical, human lens. AI tools may be subject to duplicates, false information, and other artifacts.

Design

What features are important to your learners? Consider who your learners are and what their needs may be. Using AI tools to brainstorm may help you expand your own thinking. Think of these tools as additional collaborators who may offer different perspectives in your design process.

Build

Building prototypes quickly and at a minimal cost is one of the strengths of generative AI. Ask ChatGPT or your AI tool of choice to create drafts or prototypes of your learning experience components based on the specifications you have designed. These prototypes can be a time-saving starting point for you to make adjustments and subsequently test. See below for an example offered by OpenAI, the organization behind ChatGPT.

> Fran Bellas, a professor at Universidade da Coruña in Spain, recommends teachers use ChatGPT as an assistant in crafting quizzes, exams and lesson plans for classes. He says to first share the curriculum to ChatGPT and then ask for things like fresh quiz and lesson plan ideas that use modern or culturally relevant examples. Bellas also turns to ChatGPT to help teachers make sure questions they write themselves are inclusive and accessible for the students' learning level. "If you go to ChatGPT and ask it to create 5 question exams about electric circuits, the results are very fresh. You can take these ideas and make them your own."
>
> https://openai.com/blog/teaching-with-ai

Test

Testing your new design may look like piloting it in a semester with a smaller group of students or sharing the new design with peers or colleagues for feedback. Collecting some feedback prior to launching the newly improved learning experience widely can help identify any issues you may have missed. This is an important phase, especially for larger changes!

Improve

As mentioned at the start of this section, collecting feedback from your students is critical to learning

experience design! You can use generative AI to analyse the data you collect from your learners, identify themes, and continue your iterative improvement process!

Launch

Share your new design with your learners! One helpful use of AI at this stage is to submit your assignment to an AI tool like ChatGPT and see what it produces! This can be a benchmark for what a first draft from a learner may look like – which can help you identify whether learners have gone beyond AI and added their own thoughts and context to the learning experience.

Wrap Up

Generative AI is changing many of the ways we approach learning experience design. It's opening up opportunities for time saving, innovation, and engagement, but with it comes new challenges. This section focused on how instructors or learning experience designers can use AI to support their efforts, but subsequent sections will include the student perspective on how they are using generative AI!

For further reading, check out some of the resources below:

10 Ways Artificial Intelligence Is Transforming Instructional Design

Embracing the Future of Learning: The Transformative Role of AI in Instructional Design

Teaching with AI

This is Learning Experience Design

CREATING A COURSE SYLLABUS

What might your syllabus look like?

Creating a syllabus for your learning experience can take multiple different formats. Your institution may have a template or format that you are expected to use. Typically a syllabus includes the following items:

- Course description
- Intended Learning Outcomes
- Required course materials
- Grade breakdown
- Overview of assessments
- Policies, including learner and instructor responsibilities
- Weekly lesson topics and key dates

How might we use AI to generate content for your syllabus?

Syllabus Designer Prompt [from AI for Education]

You are an expert teacher and instructional designer. Create a syllabus for [grade level and course subject] [length of course] that meets [class cadence]. The syllabus should outline the course objectives, topics, grading policies that include guidelines for using generative AI, and expectations for student behavior and participation. Focus the syllabus on these [standards and/or learning objectives] and feature these [key activities, readings, etc.]. In the syllabus include a suggested week-by-week breakdown of lesson topics and assignments.

Using the above example template, you can continue to refine the prompts by subsequently asking for the syllabus to be translated for different audiences, add different types of activities, and other refinements as needed.

A helpful resource to structure your exploration of using AI in developing your course syllabus was created by Harvard Business Review, titled

If Your Syllabus Needs a Refresh, Generative AI Can Help, which includes business-specific, examples of prompts such as the one below:

> "I am a business school professor. I'd like your help creating a syllabus that would feature a case called *TraceTogether*, which is about an app developed in Singapore during COVID-19 to do digital contact tracing. The case protagonist is Jason Bay, a leader at GovTech Singapore, the digital transformation agency of Singapore's government. Key passages in the case cover the debate over apps like TraceTogether and whether they should keep government officials 'in the loop' or 'out of the loop' to further protect user privacy. Please suggest a 10-session syllabus for a course on public entrepreneurship that includes this as one of the sessions."
>
> (If Your Syllabus Needs a Refresh, Generative AI Can Help)

Using prompts like the above can help you develop drafts of your course syllabus. Similar approaches to prompts can help you zoom in on specific content, activities, or sessions as well!

For example, a prompt like the one below may help you frame a specific session you're planning to run on the general topic of "open data and government".

> "Here is a topic of one of the sessions in my course: open data and government. Can you please suggest more specific teaching objectives along three lines: things students should know (knowledge); things students should know how to do (skills); and ways students should know how to be (attitudes and behaviors)."
>
> (If Your Syllabus Needs a Refresh, Generative AI Can Help)

An interactive H5P element has been excluded from this version of the text. You can view it online here:

https://ecampusontario.pressbooks.pub/aiinbusinesseducation/?p=55#h5p-6

Wrap Up

A syllabus can be a living, customizable document that represents the contract between learners and instructors. We want it to represent the culture of the learning experience and provide learners with what they need to set realistic expectations.

Some final tips when finishing up a syllabus:

- Have you double checked your class times and due dates against a list of institutional holidays and important dates?
- Is the pacing of your lessons, readings, and assignments reasonable given that students are taking multiple courses at one time?
- How might you include a variety of teaching methods and types of assessment (e.g., formative, summative, reflective, group, individual, written, verbal, etc.)?

If you would like to check out more relevant resources, you may want to start here:

- Syllabus Design
- 5 Steps to Designing a Syllabus That Promotes Recall and Application
- GenAI Chatbot Prompt Library for Educators: Lesson Planning

ASSESSMENT DESIGN FOR AND WITH AI

Assessment Design in the Age of AI

Creating assessments has changed dramatically since the release of ChatGPT. Our minds might first turn to the ways that learners may use AI, but these tools are also available to support instructors or learning experience designers in creating effective assessments. In this section, we are first going to talk about how AI may affect the decisions we make in designing effective assessments, and then we will consider all of these factors and how AI can be used to support the design and development of effective assessments.

For a comprehensive overview of many of these considerations, please take a look at this Generative AI and Assessment resource page created by McMaster University's MacPherson Institute.

Creating AI-Resistant Assessments

Assessments often serve multiple purposes in a learning environment, providing learners with the opportunity to practice, demonstrate, and reflect on their learning. Many educators have expressed concern about how AI use may undercut the *process* of learning, in pursuit of a final product. Below you will find a list of tasks that AI can more easily be used for and tasks that cannot be easily completed by AI (taken from this Generative AI and Assessment resource by the MacPherson Institute) to help inform how we can re-design our assessments to limit the impact of AI.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/aiinbusinesseducation/?p=57#h5p-5

What does this mean for educators?

When approaching the task of re-designing assessments to minimize unwanted impacts of AI use, there are shorter term and longer term options to pursue.

In the short term, educators can use in-class time and/or invigilation to ensure that learners are completing

their assessments without the use of AI. It may also be helpful to adjust the requirements for the assessment or the grading rubrics used. Consider having assessments focus on the human processes involved:

- Learners can reflect on the metacognitive aspects of learning. How did the process of learning go? What challenges were faced? How were they overcome? Were there any surprises during the learning process?
- Learners can submit their incremental progress for feedback from the instructor or their peers. Each step of the assessment can build to the final deliverable, with grades emphasizing each step of this process.
- Grades can be assigned for connection to a learner's own experience and to the course content covered in lectures, discussions, and readings.

In the long-term, educators may want to consider (re)designing authentic assessments. Based on the work of Grant Wiggins (1998, via Indiana University Bloomington), an authentic assessment:

- is realistic,
- requires judgment and innovation,
- asks the student to "do" the subject,
- replicates or simulates the contexts in which adults are "tested" in the workplace or in civic or personal life,
- assesses the student's ability to efficiently and effectively use a repertoire of knowledge and skills to negotiate a complex task, and
- allows appropriate opportunities to rehearse, practice, consult resources, and get feedback on and refine performances and products (Generative AI and Assessment, MacPherson Institute, 2023).

To work through the process of designing authentic assessments, we highly recommend the workbooks created by the MacPherson Institute, which can be accessed in this Redesigning Your Assessment online resource.

Creating Assessments using AI

With some of the context generated using the activities listed above, you may discover that new, authentic assessments are better suited to your learning experience. Creating new assessments or redesigning old assessments to be more effective can be a time consuming and laborious process. In this section, we cover some ways that you as the instructor or learning experience designer may use generative AI to support your efforts.

If you're new to creating prompts for generative AI tools, you may want to check out this Introduction to prompting generative AI like ChatGPT for teaching and learning from Times Higher Education.

AI can be used to generate drafts of assessment instructions, rubrics, quizzes, examples for learners, and so much more. For example, the prompt template below can be used to generate a draft of an authentic assessment.

> You are an expert teacher, proficient in developing authentic assessments that enable students to develop and exhibit their learning. Create [number] authentic assessments for my [grade level and subject] students studying [topic]. These tasks should emphasize real-world application, complex tasks, varied response formats, and meaningful feedback. The assessments should engage students and effectively demonstrate their learning, as well as enhance their skills and understanding of the subject in meaningful ways. Be thoughtful and unique, do not include [insert any remaining specifications].
>
> -From AI for Education

AI for Education has prompt templates for numerous teaching-related tasks. We highly recommend browsing their library and using these prompts as a starting point for assessment design and creation.

Some tips for making these prompts your own:

- Ask ChatGPT or your tool of choice to align assessments with specific learning objectives from your course.
- Request multiple assessment types for you to choose between.
- Provide appropriate context for your learners, the goals of your learning experience, and specific examples you may be using.
- Provide as much detail as possible (e.g., a lesson plan or subsequent assessment that you're building to)
- Request examples of ways that you can assess learners completing these tasks to give you a head start on creating rubrics.

For resources and further readings, take a look at the links below:

- AI for Education – Prompt Library
- An introduction to prompting generative AI like ChatGPT for teaching and learning
- Generative Artificial Intelligence in Teaching and Learning at McMaster University
- Authentic Assessments

PART III

ASSESSMENT & ENGAGEMENT USING AI

HOW TO IMPLEMENT IN THE CLASSROOM

"AI can now be ubiquitous in the classroom; every student and educator with a computer and internet has free access to the most powerful AI models in the world."

-Ethan Mollick and Lilach Mollick

Incorporating Generative AI into the Classroom

In today's fast-paced and technology-driven world, artificial intelligence (AI) is increasingly being viewed as a business advantage. However, businesses are facing a significant challenge in terms of cultivating a culture that not only trusts but also effectively utilizes AI. This requires a fundamental shift in mindset, as well as a comprehensive understanding of the potential benefits and risks associated with AI.

To address this challenge, it is imperative to bring this topic into the business school classroom, where students can learn how to effectively integrate AI into their future careers. By providing a deeper understanding of AI, its capabilities, and its limitations, business schools can help create a more informed and skilled workforce that is better equipped to navigate the rapidly evolving technological landscape of today's business world.

Here are some tangible ways to incorporate GenAI into the classroom:

Role-Playing Scenarios

- Designing a marketing campaign using generative AI tools.
- Developing customer service bots with human-like interaction capabilities.

Group Debates

The use of AI must be ethical, tackling bias, privacy, and accountability through discussions and debates.

- The ethics of AI in data collection and analysis.
- Balancing AI-driven efficiency with job displacement concerns.

Innovation Workshops

Creating a culture that embraces AI requires understanding its capabilities and limitations. We engage in workshops that encourage students to think creatively about AI applications.

- Brainstorming AI solutions for real-world business problems.
- Designing an AI-powered business model for a startup.

Collaborative AI Project Examples

Collaboration between humans and AI can lead to enhanced decision-making. Students work on projects where AI tools are used to complement human skills.

- Use AI for market analysis and strategic planning.
- Developing an AI-assisted customer relationship management system.

AI Literacy: Business Learning Modules

AI literacy is no longer optional. We integrate AI learning modules that cover the basics of machine learning, and natural language processing.

- Introduction to Machine Learning for Business Analytics.
- Natural Language Processing for Customer Insights.

Measuring Success and Trust in AI with KPI Discussions

Finally, we look at metrics and KPIs to evaluate the effectiveness of AI initiatives and the level of trust within an organization.

- Defining success metrics for AI projects.

- Surveys and tools to measure employee trust in AI systems.

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/aiinbusinesseducation/?p=33#oembed-1

Some things to keep in mind while incorporating AI into the classroom are:

Avoiding Plagiarism

It's important to teach students how to use generative AI responsibly. This includes understanding what constitutes plagiarism and how to credit AI-generated assistance.

Example: Discuss how the use of generative AI intersects with the concept of plagiarism. Explain that while AI can generate useful content, it's important to use this content responsibly and not represent it as one's own original work.

Have students use the AI tool to generate a business strategy for a hypothetical business. Then, ask them to incorporate this content into a short report, making sure to properly credit the AI

tool. Then have students share their reports and discuss the process of integrating the AI-generated content. Discuss any challenges they faced and how they ensured they were using the content responsibly.

Lastly, discuss the importance of ethical considerations when using AI tools. Emphasize that while AI can be a valuable tool, it's crucial to use it responsibly and ethically.

Use AI To Develop Critical Thinking

Generative AI can sometimes produce incorrect or biased information. Educators should encourage students to critically evaluate AI-generated content.

Example: Use the AI tool to generate a set of business strategies for a hypothetical company. For example, you might ask AI to generate strategies for a startup looking to enter the e-commerce market.

Divide the students into small groups and provide each group with a subset of the AI-generated strategies. Ask each group to discuss the strategies and evaluate them based on the following criteria:

- **Feasibility**: Is the strategy practical and achievable with the resources available to the hypothetical company?
- **Effectiveness**: Would the strategy likely lead to the desired business outcomes (e.g., increased sales, market penetration)?
- **Ethical Implications**: Does the strategy align with ethical business practices and respect for customer privacy and data security?

Ask each group to present their findings to the class. Encourage them to explain their reasoning and engage in a discussion with their peers.

To equip students with the necessary skills and knowledge to thrive in a business world that is increasingly relying on artificial intelligence, business schools can integrate AI-related concepts and practices into their

curriculum. By doing so, they can create an environment that encourages innovation and fosters trust in the capabilities of AI. This approach will ultimately help students become effective leaders who can navigate the complexities of a business landscape that is rapidly evolving due to technological advancements.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/aiinbusinesseducation/?p=33#h5p-8

Some examples and concepts Generated by AI

AI AS INSTRUCTIONAL OR TEACHING ASSISTANTS

Generative AI opens up opportunities to create more personalization and interaction in our learning experiences! In the video below, you will hear about how educators can use generative AI to help create materials for their courses.

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/aiinbusinesseducation/?p=61#oembed-1

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/aiinbusinesseducation/?p=61#h5p-7

Creating Cases, Examples, & Activities

Why bother with generative AI for case prep?

"Case teaching requires a great deal of thinking on your feet. But with an online tool capable of responding

Case analysis and discussion is a critical part of business education. As an educator, preparing to facilitate case discussions can be a major undertaking in order to make sure the learning experience is effective and engaging.

For a helpful case study in how business professors may leverage generative AI for case learning, we highly recommend reading the Harvard Business Review article, Elevate Your Case Prep with ChatGPT by Mitchell Weiss.

Generative AI can be used to create case discussion questions, simulate what responses you may receive, and provide related resources that may benefit the discussion. You

can also explore using generative AI to create industry examples that relate to your course topics. See below for an example prompt that you could tailor to your context to generate examples that you may not have been familiar with previously.

to your questions, you can simulate a real-time class discussion, making it possible to anticipate some student responses ahead of time."

Mitchell Weiss, Elevate Your Case Prep with ChatGPT

Example Prompt:

"You are an expert educator who is great at transforming dry course topics into engaging, relevant lessons. Based on the lesson/activity below, create [number] real world examples of the [topic] that I can use with a class of [grade level] students. The simpler and more engaging the better. Use [interests] to guide your examples. Each topic should include a resource that I can use for students interested in this example."

From AI for Educators – Real World Examples

These tools can also be used in class as part of activities that require brainstorming or idea generation, and can be the basis for reflection and critical thinking about what value proposition humans bring to organizations. For an example of how one marketing professor at Northeastern University used generative AI in his undergraduate and graduate classes, check out A Generative AI Teaching Exercise for Marketing Classes.

Summaries & Explanations

Learners often benefit from explanations of difficult or core concepts within a learning experience. These explanations take time to produce, and may not always resonate with different groups of students. One of the benefits of generative AI is that you can prompt the generation of explanations or summaries for different types of audiences (e.g., undergraduate, graduate, or general public) and with different lengths or formats. These tools can even be used to create chatbots that answer your students' questions!

Tips on how to work with generative AI to explain concepts, materials, definitions,

etc. for learners
(from AI for Educators – Help Me Understand):

- Upload an entire passage into ChatGPT to have it analyze it directly.
- Have ChatGPT identify any vocabulary words, or define any unfamiliar words.
- Use ChatGPT to help you understand how this passage relates to the main themes of the piece. In the example above, you could ask, "How does this scene relate to the play's key themes, motifs, and dramatic techniques?"
- Enlist the help of ChatGPT to prepare for potential assessments, once you understand the passage. In this example you might ask, "What are some ways my teacher might quiz me on this scene? I want to be prepared so that I can study."

Generating Practice Questions

Retrieval practice (add Roediger citation) is a powerful educational strategy that promotes long-lasting learning. However, creating practice questions can be extremely time consuming! Using generative AI to create practice questions can make this process much easier. These tools can create questions about specific topics, skills, readings, and other course materials, and provide an answer key. As with any use of generative AI, it's important for you as the expert to review these questions prior to sharing to ensure that they are correct according to what you expect learners to know.

Example Prompt #1

"You are an expert teacher with proficiency in creating and administering student assessments. Create a [type] quiz, based on the following [text/ video transcript], for [grade level, subject] students learning about [topic]. Include [insert skills]. Optional: include [pages/ seconds you wanted covered]. Provide an answer key for the teacher. "

From AI for Educators – Quizzes

Example Prompt #2

> "You are an expert teacher and skilled curriculum writer. Generate [number] "essential questions" for my [grade level and subject] class studying [topic]. The questions should stimulate thoughtful engagement and critical thinking, and reflect real world applications. Each question should be open-ended and large in scope. The questions are intended to be continually revisited and reflected upon during this topic of study. Make sure the questions are appropriate for [grade level] students."
>
> From AI for Educators – Essential Questions

For a more comprehensive overview of all these capabilities, check out the webinar "How to Use Chatbots and Intelligent Systems to Provide 24/7 Tutoring to Students"

STUDENT AI USE

Uses of AI in Business Education

This chapter introduces the incorporation of artificial intelligence (AI) tools in business education for students. Its goal is to familiarize learners with the basics of AI and demonstrate its relevance in the business context. The chapter also presents various practical AI tools, offering students opportunities to enhance their understanding and problem-solving skills.

https://continuing.mcmaster.ca/5-ways-artificial-intelligence-ai-is-revolutionizing-the-business-landscape/

1. **Tailored Learning Experiences:** AI can customize learning for each student, adapting to their unique learning style, preferences, and performance. This ensures a more effective and personalized educational journey.
2. **Realistic Business Simulations:** Generative AI could be used to create simulations that mimic real-world business interactions, such as negotiations and sales pitches.This creates a safe space for refining decision-making and problem-solving skills in a controlled environment.
3. **Data Analysis:** AI assists in navigating through vast datasets to unveil critical business trends and patterns. This equips buisness students with valuable insights that might be challenging to discover using traditional methods.
4. **Intelligent Teaching Tools:** AI-powered tools like chatbots, virtual assistants, and intelligent tutors provide real-time assistance and feedback. These tools optimize learning efficiency, offering support precisely when buisness students need it.
5. **Enhanced Decision-Making:** AI's analytics and insights empower students to make informed, data-driven business decisions. This elevated decision-making capability positions them to have a more significant impact in the corporate world.

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://ecampusontario.pressbooks.pub/aiinbusinesseducation/?p=63#oembed-2

Useful AI tools

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://ecampusontario.pressbooks.pub/aiinbusinesseducation/?p=63#h5p-12

Limitations to using AI

AI tools have inherent limitations and constraints that impact their ability to think critically, analyze, and express human-like emotions. These tools lack comprehension of the meaning behind words and responses, leading to a lack of true originality, insight, or depth in their interactions. The accuracy, authenticity, and trustworthiness of outputs from AI tools are consistently in question. One reason is the lack of transparency in understanding how these tools generate responses, as well as the fact that they are trained on data from the web, which contains both factual and opinion-based information. The challenge of distinguishing between fact and opinion further complicates the reliability of AI-generated content. Biases can be present in the responses of AI tools due to the data used in their training.

Despite efforts to ensure objectivity, the potential for bias remains. OpenAI has taken steps to mitigate biases, but achieving complete neutrality is an ongoing challenge. Additionally, attempts to enhance neutrality in AI tools may raise ethical concerns related to worker exploitation. Instances of low-wage compensation for human workers involved in labeling content for AI training highlight the ethical dilemmas associated with embedding safety and morality into these systems. Questions arise about the neutrality of content labeling based on human judgments and the consideration of cultural differences in the process. This raises broader ethical considerations about the business practices employed to instill ethics and morality into algorithms and machines.

Refer to the McMaster AI policy here.

Take a look at our previous sections for a more robust description of the strengths and weaknesses of AI and the ethical considerations.

LIBRARY AND RESEARCH SKILLS USING AI

Uses of AI in Research

In addition to enhancing library and research skills, AI plays a pivotal role in streamlining various aspects of the research process, from planning and design to data analysis and content generation.In the realm of business education, the integration of AI into library and research skills revolutionizes how students access and utilize information. AI-driven search engines enhance the efficiency of information retrieval, enabling students to find relevant academic papers and business literature with greater precision. These tools also offer personalized recommendations tailored to students' interests and reading habits, facilitating deeper exploration of topics. AI-powered content summarization aids in digesting complex research findings, while data analysis and visualization tools empower students to derive insights from vast datasets.

AI-based citation management tools assist students in organizing references, formatting citations, and creating bibliographies according to academic standards. Additionally, plagiarism detection software powered by AI helps students uphold academic integrity by identifying and preventing unintentional plagiarism.

Generating Research Ideas: AI tools can assist researchers by providing a list of related keywords or phrases, aiding in narrowing down research focus areas and generating innovative ideas.

Finding Relevant Information: AI tools can generate curated lists of articles, papers, and other sources relevant to researchers' topics of interest, facilitating efficient literature review processes and enhancing information retrieval capabilities.

Generating Titles and Summaries: AI-powered tools can automatically generate titles or succinct summaries for research papers, helping researchers succinctly convey the essence of their work and attract readers' attention.

Generating Prompts:

- Be specific: Provide additional context and information to your question, such as the audience and the desired length of the response.
    - Adding this type of context and being specific, clear, and concise will help generate more useful outputs.
- Asking the AI to behave as if were a type of person, process, or object can be an easy way to start generating better prompts. The AI will attempt to emulate that role and tailor its answers accordingly.
- Generative AI can produce many different types of outputs, including code, reports, summaries and synopses, business communications, audio, images, and much more. Being specific about the type of output you want will produce better results
- Giving the AI a reference point in the form of a sentence or paragraph that you'd like your output to resemble will help it produce better results. Nonetheless, it's crucial to respect copyright. Don't submit copyrighted content and ask the AI to replicate, rewrite, or make a similar work.

For more details on how to generate prompts visit Getting started with prompts for text-based Generative AI tools

Example of prompts in Market Research:

"Create a comprehensive profile of my ideal customer, including demographic information, psychographic characteristics, and purchase behavior, that will help me identify and target the right people for my [product/service]."

For more examples of prompts in research refer here

AI Limitation in Research:

Despite its transformative potential, AI in research for business educations has notable limitations. One prominent concern is the potential lack of accuracy in AI-generated outputs, as these systems rely on training data that may contain inaccuracies or biases.

Additionally, AI tools may not have access to certain specialized databases, limiting the scope of information they can provide. The inability to comprehend complex research queries and the reliance on pre-existing data also contribute to limitations in precision.

PART IV
RESOURCE REPOSITORY

POLICY - EXAMPLES & CONSIDERATIONS

AI can be used to generate new content and as such is now one of the fastest-adopted and free ways to create new text or visual content.

This can pose a problem as students and educators can now produce content with potential misinformation, personal data and questions over copyright infringement.

Over 100 leaders in AI technology have come together and written an open letter *(Link opens in a new tab)* urging a collective pause on the development of artificial intelligence tools that are more powerful than GPT 4. This is to allow time for the development of security and safety features, as well as the creation of regulation and governance structures. Regulating AI is necessary not only for many nations but also for specific sectors like post-secondary education.

McMaster University Developed Provisional Guidelines by its own AI Task Force. *(Link opens in a new tab)* This is on Generative AI in Teaching and Learning *(see the link below, last updated in August 2023).*[1]

https://provost.mcmaster.ca/office-of-the-provost-2/generative-artificial-intelligence/task-force-on-generative-ai-in-teaching-and-learning/provisional-guidelines-on-the-use-of-generative-ai-in-teaching-and-learning/

source: McMaster-Provisional Guidelines on the Use of Generative AI in Teaching and Learning *(Link opens in a new tab)*

Other policies and guidelines are listed below:

[2] The European Network for Academic Integrity is studying the ethical use of generative artificial intelligence in post-secondary education through these guidelines. *(Link opens in a new tab)*

Anna Mills' webinar *(Link opens in a new tab)* provides a comprehensive overview of generative AI technology and its applications. She explains how it operates and what makes it different from other types of AI. Additionally, she offers insights on how to distinguish between human and AI writing and provides practical strategies for designing assignments that discourage AI usage.

UNESCO has released guidelines for using AI-generated content *(Link opens in a new tab)* in education.

This series of webinars from Deakin University *(Link opens in a new tab)* provides an overview of generative AI, with a particular emphasis on evaluation and future prospects.

This series from MIT Technology Review *(Link opens in a new tab)* examines the potential for exploitative uses of generative AI.

[1] "Provisional Guidelines on the Use of Generative AI in Teaching and Learning – Academic Excellence – Office of the Provost." *Academic Excellence – Office of the Provost*, 22 Dec. 2023. [online resource]

[2] "Generative Artificial Intelligence in Teaching and Learning – MacPherson Institute." *MacPherson Institute – MacPherson Institute, McMaster University. [online resource]*

REPOSITORIES, TOOLS, & MORE!

AI Tools For Business Education

As **Artificial Intelligence (AI)** is becoming increasingly important in today's world, it's essential to have an understanding of the various AI tools available to you. With plenty of options to choose from, navigating the landscape of AI tools can be daunting, especially if you're new to this area. However, several tools, repositories, and resources can help you get started with using AI in business education. These resources provide a comprehensive overview of the various AI tools available to help you select the best ones for your educational needs.

In addition to these tools and resources, it's important to stay up to date with the latest advances in AI. This can be done by following AI blogs, attending AI conferences, and joining AI communities. By doing so, you can learn from experts in the field and gain valuable insights into how to use AI to improve your knowledge and workflow in business education. Below you'll find some of the resources that are compiled to point you to some AI tools.

Repositories

aiTree *(Link opens in a new tab)* is an AI repository with curated tools for education and various use cases which can be filtered by free and freemium models

theresanaiforthat *(Link opens in a new tab)* which at the time of this writing is one of the if not the largest curation of AI tools to date

Nexa AI *(Link opens in a new tab)* is a platform to discover and learn AI tools. The AI search understands you via a chat and precisely recommends AI tools from 12,000+ AI tools across 200+ categories.

aiRepo *(Link opens in a new tab)* AI Tools for businesses Over 3000 AI tools and ever-growing

Academia Tools

Elicit *(Link opens in a new tab)* – Elicit uses language models to help you automate research workflows, like parts of literature review.

genei *(Link opens in a new tab)* – Summarise academic articles in seconds and save 80% on your research times.

Explainpaper *(Link opens in a new tab)* – A better way to read academic papers. Upload a paper, highlight confusing text, and get an explanation.

Consensus *(Link opens in a new tab)* – Consensus is a search engine that uses AI to find answers in scientific research.

Mem *(Link opens in a new tab)* – Mem is the world's first AI-powered workspace that's personalized to you. Amplify your creativity, automate the mundane, and stay organized automatically.

Taskade *(Link opens in a new tab)* – Outline tasks, notes, generated structured lists and mind maps with Taskade AI.

Notion AI *(Link opens in a new tab)* – Write better, more efficient notes and docs.

Business Tools

Propeller *(Link opens in a new tab)*– Master your real-world work skills through immersive roleplay

Infography *(Link opens in a new tab)*– transforms blogs into shareable infographics

CalenAI *(Link opens in a new tab)*– This is an AI-powered scheduling agent that has a human-like voice.

Jasper.ai *(Link opens in a new tab)*– An AI copywriting tool that uses NLP to customize tone and voice to match brand guidelines.

You.com *(Link opens in a new tab)*– A search engine built on AI that provides users with a customized search experience while keeping their data 100% private

AnswerThePublic *(Link opens in a new tab)*– This tool generates long-tail keywords by utilizing search engine autocomplete data. It helps to target specific audiences for better results.

Articles

This newsletter *(Link opens in a new tab)* by Ethan Mollick focuses on generative AI in post-secondary education and how it can be used by educators.

The weekly hour-long podcast coverage of major technology issues in The New York Times podcast, Hardfork *(Link opens in a new tab)* has a significant focus on AI.

Resources for Educators

McMaster University's AI Resources

McMaster University offers guidelines and practical instructions for using generative AI in education. These include ethical considerations and strategies for assignment design.

Santa Fe University

The Library of Santa Fe University has created a database of resources specifically designed for post-secondary educators. The resources are organized based on frequently asked questions and include information on how educators can incorporate generative AI into their teaching. There are also free courses available on the topic of using generative AI.

List curated by Anna Mills

This curated list of resources for post-secondary educators, "AI Text Generators: Sources to Stimulate Discussions Among Teachers," is continually updated and well-organized, and was created by Anna Mills for the Writing Across the Curriculum Clearinghouse.

Contact North

Contact North has compiled resources and produced webinars on generative AI for teaching and assessments.

Wharton School Guides

The Wharton School and OpenAI provide comprehensive guides and video series to help educators leverage generative AI in their teaching.

OpenAI Guides

Generative AI is a powerful tool that, when used thoughtfully, can enhance the educational

experience. By utilizing the resources and guidelines available, educators and students can engage with these technologies in a way that is ethical, effective, and transformative for learning.

"Generative Artificial Intelligence in Teaching and Learning – MacPherson Institute." *MacPherson Institute – MacPherson Institute, McMaster University*. [online resource]

APPENDIX: REFERENCES

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