Using Generative AI With Your Students

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IDEAS FOR ACTIVITIES AND ASSIGNMENTS

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Contents

About the Book

Using Generative AI With Your Students: Ideas for Activities and Assignments was inspired by and adapted from the open textbook *ChatGPT Assignments to Use in Your Classroom Today[PDF]* by Kevin Yee, Kirby Whittington, Erin Doggette, and Laurie Uttich, published by FCTL Press Orlando, Florida shared under a Creative Commons BY-NC-SA 4.0 license as a PDF.

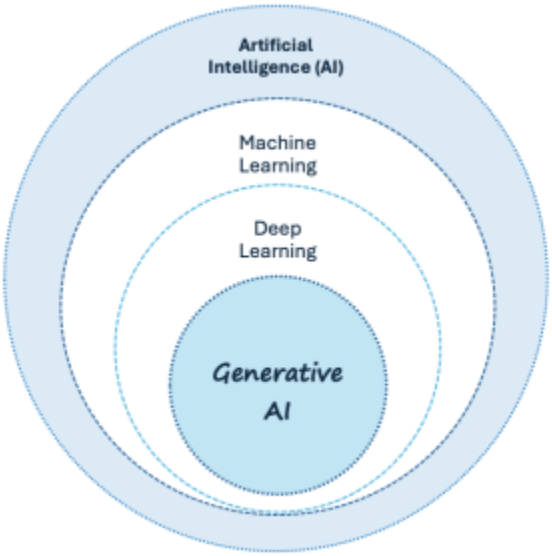
This new adapted open textbook, uses the generic term Generative AI with prompt suggestions broad enough that they should be useful in any number of Large Language Model (LLM) type AI.

See the version history chapter for more details about this new book.

Introduction

GENERATIVE AI, CHATGPT, AND YOUR STUDENTS

By now, almost everyone has heard of ChatGPT. Its website (and later app) crushed records in terms of the briefest length of time needed to amass 100 million users. ChatGPT uses a type of generative Artificial Intelligence (AI) that not only burst onto the scene with amazing speed from relative obscurity (at least for those not already working in the field), but also has continued to evolve rapidly—and by some indications, its development may even be speeding up.



Though ChatGPT may be the first generative AI product many of us used directly, there are a huge variety of new AI products released to the public each week, both as standalone products or integrated into software like Microsoft Office, Adobe Photoshop and others and the presence of AI in these systems and others will only increase in the future. Those of us on the layperson and user side of the process are being told to prepare for constant AI evolution, a future of AI in almost everything we do, regardless of field or discipline, and a need to develop skills that make us ready to adapt and keep adapting to the ever-changing mosaic of AI that awaits us.

SCOPE, REACH, AND ORGANIZATION OF THIS BOOK

This book does not explain Generative AI basics, it is assumed that those looking to work with Generative AI in their learning spaces already have this knowledge.
The book is divided into three sections, with titles that give clear descriptions of what the information they contain:

- Activities to Help Students Understand Generative AI

- Activities to Get Students Using Generative AI
- Ideas for using Generative AI to Support Your Teaching Practice

Each section is preceded by a short introduction that gives some important background and rationale. The Activities from the original open textbook have been adapted to be relevant to NSCC courses and student/faculty need.

It is recognized that while some people will read this book cover-to-cover, others may dip into individual activities without reading the framing. For that reason some duplication around common cautions or framing around Generative AI can be expected between activities.

ETHICAL CONSIDERATIONS AND CAUTIONS

As a new technology, there has been both excitement and caution around Generative AI. In this text we try to balance the need/desire to pull an important new technology into learning spaces, while highlighting some of the key concerns that faculty should consider.

Bias and Error

When using Generative AI in an education setting, faculty should be aware of issues of bias and error that can result from the algorithmic responses generated by large language models(LLMs). While we want to recognize the ways this new technology can enhance the learning experience, we don't want our students to have incorrect or biased information become a part of that learning. For that reason, most activities in this book recommend that faculty (the subject matter experts for their fields) debrief with students to discuss information pulled from Generative AI. If you would like additional assistance around how to do this for learning activities involving generative AI, reach out to the Centre for Teaching and Learning.

Academic Integrity

Academic Integrity is a second big ethical consideration for use of Generative AI. This consideration has many facets including:

- Debate about whether the information fed to LLMs to train them was ethically/legally obtained: some people may feel this means it is not possible to use a product that was created unethically in an ethical manner.
- Concerns about how students are using Generative AI in learning and evaluations and if this constitutes cheating.
- Questions about citation and acknowledgement of AI Generated content.

These questions are not yet answered and will provide good food for discussion (that will help build critical thinking skills) with your students. For student supports, including in-class workshops for Academic Integrity, contact your campus library. For faculty supports, contact the library or the Centre for Teaching and Learning.

Some General Cautions for all Generative AI activities

- You cannot require students to sign up for third party products, although you can present it as an option.
- Always emphasize to students the importance of reading terms of use and privacy information.
    - NSCC's Enterprise license with Microsoft includes Copilot, so students already have access to this product.
- In particular with creative/exploratory topics which can be more subjective, Generative AI may give inconsistent responses. Test your prompt topics before giving them to students to get a sense of the types of responses they will generate.
- Be prepared that students may get suggestions that don't match your lesson plan and that you may need to discuss these.

FEEDBACK AND GROWTH

It is our hope that this book will grow as more and more faculty embrace using Generative AI with their students. If you have activities that you have developed that you would be interested in sharing with other faculty (and with an Open License), please contact the Centre for Teaching and Learning at ctl@nscc.ca

The same email address can be used for any feedback on the book you would like to share.

NSCC Resources

- Centre for Teaching and Learning's Teaching Commons Pages on Artificial Intelligence in the Classroom

PART I

ACTIVITIES TO HELP STUDENTS UNDERSTAND GENERATIVE AI

WHY IS AI LITERACY IMPORTANT FOR YOUR STUDENTS?

In a traditional research process, students are often asked to find and analyze information relevant to their activities or assignments. The ability to identify an information need, and search effectively for information to fulfill that need, is a core component of information literacy. Being able to analyze, interpret and integrate different sources of information into an assignment is often demonstrated by accurate citing. Indeed, properly citing where information comes from is an important component of academic integrity and scholarly writing. With Generative AI, this research process is turned upside down.

Unlike traditional search engines that retrieve lists of results based on your search query, Generative AI responds to searches (often called "prompts") with a single, definitive answer. Critical thinking therefore shifts from finding, evaluating and using many sources of information (the traditional research process) to evaluating the usefulness and credibility of an AI output.

To understand why the outputs of Generative AI are often inaccurate, it is important to understand how AI works. The purpose of this chapter is to have students engage with and evaluate the outputs of Generative AI, to better understand its capabilities and limitations.

Generative AI is a category of software that generates an output after having learned common patterns and structures. The category includes not only text but also images and even video. Those that focus on text are called Large Language Models (LLMs). LLMs can generate text because they have absorbed billions or even trillions of pages of text, often described as having been "trained on" the material. This could include parts of the Internet, published books, academic articles, and almost any printed and digital material deemed relevant for a broad audience. Ultimately, exactly what an LLM has been trained on remains a black box mystery, as few of the companies have been forthcoming with details. ChatGPT is so named because it's optimized to provide a conversation ("chat") that optimizes its generative pre-trained transformer ("GPT") training.

LLMs like ChatGPT are essentially word-predictors. Based on all those prior examples of recorded text, they have a good idea of the next logical word in any given sentence. Therefore, everyone from teachers to students needs to remember that these word predictors are not answer generators.

ChatGPT can generate answers, but it is not always an accurate answer-generator. Moreover, it will deliver

its answer with absolute certainty. It's understandable why students might accept ChatGPT's explanations and arguments since they are delivered without the slightest hedging or trace of hesitation. Yet its answers are not trustworthy. Since it's not accessing a database of information known to be true, but merely generating "plausible next words," it is inclined to invent (often called "hallucinate") facts and details wholesale, and baldly assert them as if they were true.

Activities in this section have been designed to have students engage with Generative AI software to learn more about how prompts can be used to retrieve certain types of outputs from. Engaging in classroom discussion is an important part of these activities, as students may need help identifying how information may or may not be accurate.

CHAPTER 1

Searching as Conversation

STUDENT LEARNING OBJECTIVE: PRACTICE ENTERING A SEARCH QUERY IN GENERATIVE AI AS A SERIES OF PROMPTS (PROMPT CHAINING)

Unlike search engines, many Generative AI programs will remember previous prompts from the same session. In this way, "searching" using Generative AI is more like a conversation. To learn about how Generative AI behaves conversationally, students can practice "talking to" Generative AI the same way they would talk to any human. When speaking with other humans, we don't restate what we have already said. Instead, we ask new and different questions to clarify or ask for additional details. Asking a series of related prompts is referred to as prompt chaining.

Activity Steps

- Give students a prompt for Generative AI
- Have the students read the AI output carefully
- Based on the response, have students create two follow-up prompts to ask for clarification.

Discussion Questions

- What information was missing from the initial response that you received?
- How did prompt chaining help you gather more information on your topic?
- How is searching in AI more like a conversation than a "traditional" search?

Considerations

- You may provide students with guidance on how to format additional prompts, or you can give them the opportunity to explore what makes sense to them conversationally.
- Please refer to cautions that apply to all activities using Generative AI.

Example prompts

Initial Prompts for Prompt Chaining Activities

- Explain [*theory or practice related to your topic*] using everyday words.
- What are the steps in completing [*a practice or procedure in your industry*]?
- Why is it important for [*profession related to your industry*] to understand [*task that or topic that is relevant to your* industry]?

Follow-up Prompts for Prompt Chaining Activities

- Can you explain [*specific term from AI response*] further?
- But what if [*question relevant to the information shared*]
- Are there any additional [*theories/steps/opinions]* on this topic?
- Is this the case in the [*Canadian/Nova Scotian, etc.*] context?

An example of prompt chaining in use in Copilot using a Health Care Example:

- What steps do nurses use to safely administer medications to patients?
- Can you tell me more about a Medication Administration Record?
- Is a MAR also used in Nova Scotia?

CHAPTER 2

Regenerate a Response

STUDENT LEARNING OBJECTIVE: REGENERATE A RESPONSE TO A SINGLE PROMPT FOR A NEW OUTPUT

Many Generative AI programs allow you to regenerate a response based on the same prompt for a different result. This regenerated response will use the same information to rewrite the sentences in a different pattern, order, or tone. New information may or may not be included in the regenerated response.

Activity Steps

- Enter an initial prompt into Generative AI.
- Record the initial AI output to the prompt.
- Use the "regenerate response" option to create a new response to the same prompt.
- Record the second AI output from the same prompt.

Considerations

- How this activity works will depend on the Generative AI program you use. Some programs will have a "regenerate" option, while others will require you to start a new chat and re-enter the prompt.
- Entering the same prompt into Generative AI programs at different points in the semester may result in greater variations in output (depending on the program). This is another variation of this activity.
- Entering prompts that are more open ended and/or broad may result in greater variation in output.
- Please refer to the cautions that apply to all activities using Generative AI.

Discussion Questions

- Did the first and second outputs differ? If yes, how?
- Was one response more correct or accurate than the other? How do you know?
- Was response easier to understand?

- Is Halifax, Nova Scotia a good place to live?
- What are the United Nations' Sustainable Development goals and why are they important?

CHAPTER 3

Rephrase Prompts

STUDENT LEARNING OUTCOME: REPHRASE A GENERATIVE AI PROMPT FOR A DIFFERENT OUTPUT.

Much like you might ask a person to rephrase a question or a sentence if you do not initially understand, you can do the same with AI. Prompt rephrasing is a way of having a conversation with the AI. When we rephrase a prompt, we can ask for information more relevant to our needs. Rephrasing a prompt may be done by simply rearranging the prompt structure, or it may be changing a "what" to a "why" or a "how" question.

Activity Steps

- Provide students with an initial prompt.
- Ask students to come up with two other ways to ask the same or similar prompt.
- Have students enter each prompt into the Generative AI program, one at a time.
- Record and analyze all three outputs.

Discussion Questions

- What are the differences between the three outputs that were generated?
- Which prompt and response was the most useful to you? Why do you think that is the case?
- How might you use "what", "why" and "how" questions in your prompts to learn about a topic?

Key Considerations

- Changing the action word (what, why, how) may create a larger difference in output than simply rephrasing the same question.
- Please refer to cautions that apply to all activities using Generative AI.

Example Prompts

- Describe the mechanisms through which muscles contract.
    - How do muscles contract?
    - What makes our muscles contract?
- What are the benefits using S.M.A.R.T. Goals?
    - Why should I use S.M.A.R.T. Goals?
    - Are S.M.A.R.T. Goals effective?

CHAPTER 4

Length

STUDENT LEARNING OUTCOME: CREATE GENERATIVE AI PROMPTS THAT RESULT IN OUTPUTS OF DIFFERENT LENGTHS.

There is no standard length to a Generative AI response but the software will attempt to provide a comprehensive output to answer to the prompt that has been inputted. In some situations, this may result in a longer explanation than required. Students are able to direct Generative AI to create responses of varying length by including this direction in their prompts.

Activity Steps

- Provide students with a topic for this activity.
- Ask students develop 2 prompts for generative AI, one that will result in a long response and one that will result in a short response.
- Have students enter both prompts into the software and analyze the outputs.

Discussion Questions

- In what situations or circumstances may the long response provided by AI be useful? How about the short response?
- What other words might we use to retrieve a short response? (Summarize, paraphrase, etc.)
- Compare the long and the short responses. Do you feel as though there is any relevant information contained in the long response that is not included in the short response?
- Do you notice any issues with accuracy of the response? Did accuracy vary between the short and long response?

Considerations

- Please refer to cautions that apply to all activities using Generative AI.

Example Prompts

- What is the importance of superconductors?
    - Give me this response in a four-paragraph response.
    - Summarize this in three sentences.
- Write a short story about a cat in a coffee shop.
    - Write a four-sentence story about a cat in a coffee shop.
- Explain the difference between qualitative and quantitative research.
    - Give me this explanation in 5 bullet points.
    - Give me this explanation in the form of a 6 paragraph essay.

CHAPTER 5

Hallucinated Sources

STUDENT LEARNING OUTCOME: VERIFY THE EXISTENCE OF REFERENCED SOURCES AND ASSESS THEIR QUALITY GENERATIVE AI PROGRAMS DIFFER IN THEIR ABILITY TO PROVIDE CITATIONS.

Many Generative AI programs that function as LLMs are vulnerable to "hallucinating" (inventing) facts in general; this includes sources, citations, and direct quotations. When assessing the credibility and accuracy of Generative AI outputs, students should pay particular attention to evaluating the sources provided.

Activity Steps

- Provide students with a Generative AI prompt that will result in the creation of a bibliography or output with citations.
- Ask students to use tools such as library databases and other search engines (such as Google) to verify the existence of the outputted sources.

Discussion Questions

- How did you verify the existence of the sources provided in the bibliography?
- Were any of the sources in the bibliography "hallucinated"? Why do you think this happens?
- If you were completing an assignment on this topic, do you think these sources would be your "best" option? Consider things such as relevancy, currency and accuracy.

Considerations

- Please refer to cautions that apply to all activities using Generative AI.

Example Prompts

- Create a bibliography with 5 recent sources on *[topic relevant to your course]*
- Create a bibliography of the five most important publications in *[a topic relevant to your course]*

PART II

ACTIVITIES TO GET STUDENTS USING GENERATIVE AI

WHY GET YOUR STUDENTS USING GENERATIVE AI?

One of the biggest concerns we have heard from faculty since the mainstreaming of Generative AI programs is around Academic Integrity and the misuse of Generative AI to complete student work. However, rather than try to prevent our students from using Generative AI in their course work, it has quickly become apparent that a better approach may be to embrace its capabilities and guide students in its use.

We've been here before in terms of technologies that change the skills that are important to study and work. Calculators, Spellcheck, grammar checkers, not to mention industry specific technologies that have brought huge changes to how work is done: many of these technologies went through phases when educators questioned if they were appropriate for us in a learning environment or if they meant students were no longer learning foundational skills. Over time our concept of foundational skills tends to shift to include those new technologies, and it is likely that Generative AI will be no different.

As instructors our role is to ensure that students can demonstrate that they have achieved learning outcomes. In many cases, there are legitimate concerns around how to have students demonstrate their own understanding of an outcome rather than having Generative AI show it for them.

Even with authentically designed courses, the concern around Academic Integrity violations is real. But this is where expectations setting and establishing clarity on what is and isn't acceptable becomes important. By having conversations about Generative AI, when its use might be appropriate and then encouraging our students to practice those acceptable uses in class, we shift the conversation around Academic Integrity from punishment to possibilities and we give students the chance to practice getting it right before they are addressing evaluations or the work world.

The activities in this section are intended to help the conversation around acceptable uses for Generative AI, while also giving students practical assistance in applying Generative AI in their work. These activities can be used in class, or to help students prepare for class or for evaluations. Some may be adapted for evaluations as well.

NSCC Resources

- For more information on how to set these expectations, see the NSCC Centre for Teaching and Learning's Teaching Commons resource on Responsible Use of Generative AI .

- NSCC's Centre for Teaching and Learning offers supports around Course Design, Facilitation and Evaluation that help faculty develop more hands on, authentic class activities, many of which are available on the Teaching Commons' Teaching Resources pages.

CHAPTER 6

Introducing Topics

STUDENT LEARNING OUTCOME: EXPLORE A NEW TOPIC USING GENERATIVE AI AND CLASS DISCUSSION

An interactive method for bridging into a new topic, while simultaneously allowing students to practice using Generative AI and applying critical thinking skills around the results.

ACTIVITY STEPS

- Determine if this will be given as individual pre-work for a class beginning a new section or topic OR as an in-class activity.
- Give students a broad topic term or several key terms within the topic and have them prompt Generative AI for explanations.
- Ask them to note specific theories, people (experts), definitions that appear relevant to the topic(s) prompted.
    - You may want to provide guiding prompts or develop those in class with the students. This could help steer the activity to the appropriate depth for the course.
- Debrief their findings and collectively build an overview of the topic.

DISCUSSION QUESTIONS

- Can you summarize the main topic in a sentence or two?
- How does this topic relate to your field of study/industry?
- What are the most important points for you to know now? Which might be something you would need to know down the road?
- How do you know the source of the information? How do you know if the information is correct?
- What gaps do you still have around this topic?

CONSIDERATIONS

- The debrief of this activity is key to making sure the students come away with an accurate picture of what you want them to learn.

- It is important to reiterate information literacy content around verifying Generative AI input for correctness, being aware of potential bias, and transparency of sources.

Example Prompts

Possible prompts at the start of a course:

- What are the key topics connected to the study of [*your course topic*]?
- What might I learn about in a course called [*your course name]?*
- What topics might be covered in a course intended to teach [*one of your course learning outcomes*]
    - Use this as an activity on the first day of class to encourage students to review the course workplan by matching items in the workplan to the Generative AI output.

Possible prompts at the start of a new unit or topic:

- What are some of the key points to understanding [*your topic*]?
- Who are the key steps in [*your topic*]?
- How would you explain [*your topic*] to a student studying it for the first time?

CHAPTER 7

Request Definitions, Synonyms, and Antonyms

STUDENT LEARNING OUTCOME: LEARN THE MEANING OF KEY TERMS USING GENERATIVE AI AS A DICTIONARY OR THESAURUS

Many of our programs have technical terms that are important for students to understand. Rather than simply telling students definitions to memorize, having them work with Generative AI to collect definitions gives a more interactive approach. Exploring synonyms and antonyms can be helpful to assist students to better understand complicated terms.

KEY CONSIDERATIONS FOR THIS ACTIVITY

- Will you use this as a pre-class or in-class activity?
- Will you lead students through or have them work in small groups?
- What topics will you have student define? Will they all define the same terms or will individual groups work on different terms and share them back?
- What definitions do you want students to come away with and how will you ensure that they leave with those?
- What steps will you take to mitigate any errors/bias in Generative AI results?

ACTIVITY STEPS

- This could be assigned as individual pre-work for a class beginning a new section or topic OR it could be used as a bridge-in or learning activity in that class.
- Do a pre-test of the terms you will ask Generative AI to define to ensure that you are getting answers that suit your course. This is particular important for terms that may have different meanings in different industries.
- Provide students with a list of terms and the instruction to seek definitions using Generative AI. (This can be done invidually or in small groups).
- Have students discuss and record definitions.
- You may additionally want to provide guiding prompts or develop those in class with the students. This could help steer the activity to the appropriate depth for the course.
- Debrief their findings and collectively build an overview of the topic. This provides opportunity for

classroom discussion around understanding how Generative AI creates its responses and potential issues around Bias and Incorrect Information. It also provides opportunity for learning around Generative AI as outlined in Regenerate a Response.

Sample Generative AI Prompts

Possible Prompts for Definition topics

- What is the definition of [*assigned term*]?
- What is the definition of [*assigned term*] in [*specific field*]?
- How would you explain [*assigned term*] to someone who is new to the topic?
- Can you give me a plain language definition of [*assigned term*]?

Possible Prompts for Synonym/Antonym searches

- What is a plain language term for [*technical term*]?
- What is the opposite of [*assigned term*]?
- What is another way to explain [*previously generated definition*]?

CHAPTER 8

Brainstorming a Topic

STUDENT LEARNING OUTCOME: USE GENERATIVE AI TO IDENTIFY TOPICS WITHIN A TOPIC

One of Generative AIs great strengths is its ability to create lists and bullets related to almost any topic.

When approaching a new topic, it can be help students to contextualize it if they know what it relates to and where it fits in with what they already know. Seeing how that topic extends beyond the classroom and its impact on the world can also build their interest in learning. Unlike the previous chapter on introducing a topic, which aims to help students get an overview or introduction to a topic, the point of this activity is to find as many connections as possible.

ACTIVITY STEPS

- Choose a topic for your students to brainstorm.
    - The topic can be discrete/specific (ex. explaining a process, theory or the history of something) or more creative/exploratory (ex. uncovering contributing factors or potential solutions to problems).
    - You could begin with a large group brainstorm to break a large topic into smaller subtopics and have each group explore a different one, or you could use the activity to identify the initial subtopics.
- Assign students to small small groups to prompt Generative AI for explanations
- Encourage them to use prompt chaining to explore deeper into the topic.
    - You may want to provide guiding prompts or develop those in class with the students. This could help steer the activity to the appropriate depth for the course.
- Debrief their findings and collectively build an overview of the topic.

DISCUSSION QUESTIONS

- What are 2-5 pieces of information you discovered about your topic?
- Once you have a number of subtopics identified:
    - What connections do you see between these topics?

    - How would you group the information you have gathered into sub-topics of the main topic?
- How do you know the source of the information? How do you know if the information is correct?
- How does this topic relate to your field of study/industry?
- Knowing the focus of this course, which of the topics identified do you think we will focus on?

CONSIDERSATIONS

- This activity can be used to try to develop a picture of a complex subject, or to show students wider connections to something that, on the surface, seems quite simple
- This activity can be used as a flipped-classroom technique to have students start to explore a topic before they come to class.
- The debrief of this activity is key to making sure the students come away with an accurate picture of what you want them to learn.
- It is important to reiterate information literacy content around verifying Generative AI input for correctness, being aware of potential bias, and transparency of sources.

Example Prompts

Possible prompts for a discrete/specific topic:

- What are the steps in [*industry specific process*]?
- What are the [*defined number*] main functions of [*industry specific equipment or service*]?

Possible prompts for a creative/exploratory topic:

- What are the major factors contributing to [*issue in your industry*]?
- What are some potential impacts of [*change in your industry*]?

CHAPTER 9

Correctness

STUDENT LEARNING OUTCOME: FACT CHECK INFORMATION RELATED TO THEIR TOPIC OF STUDY

This activity can be used to reinforce important concepts in your course, while simultaneously helping students see the potential weaknesses of the software so they don't rely on it unquestioningly.

ACTIVITY STEPS

- Use Generative AI to create statements of fact or short overviews of a topic you want your students to learn about.
- Review and intentionally add one or two errors (if none are already present) to this output.
    - You could also Prompt Generative AI to do this.
- Give students the written output and have them review the content to locate and correct any errors.
- Debrief the activity as a group.

DISCUSSION QUESTIONS

- What errors have you identified?
- How did you confirm that they were errors?
- What is the correct answer?
- What would the impact of the wrong information be?

CONSIDERATIONS

- Will you have students use Generative AI to locate and provide corrections for the answers, or is this something you want them to do based on class discussions, review notes and/or textbooks?
- Make sure you clearly label the activity as error correction so students do not mistake this for correct process.
- To model Academic Integrity, make sure to include a statement that acknowledges your use of Generative AI to create the activity content.

- If you are considering encouraging your students to use your campus library to verify the information generated in this activity, it's a good idea to give your campus librarian a heads up to prepare.

Example Prompts

- I am an instructor in a carpentry program. Please write a ten step list for framing a wall but make two steps wrong. Tell me which are wrong. Please use metric for measurements.

CHAPTER 10

Explanations for Wrong Answers

STUDENT LEARNING OUTCOME: USE GENERATIVE AI TO CORRECT ERRORS IDENTIFIED IN ASSESSMENTS OR EVALUATIONS

Faculty spend a great deal of time marking student assignments and offering feedback. Errors in both assessments and evaluations can offer great learning when students read that feedback or follow-up on their errors, but many students won't directly approach instructors to ask questions to help them understand their answers. If unresolved, students may retain their misconceptions, impeding their ability to acquire further knowledge on it later and hindering their future learning.

ACTIVITY STEPS

- Return work to students with errors noted and feedback that indicates where more learning is needed
- Direct students to ask Generative AI for explanations as to why their answer was incorrect
- Have students review those explanations and reiterate them in a way that shows their learning.
- Review their new explanations to see if they have now understood the concepts

CONSIDERATIONS

- This activity will assist students in learning from their errors, but may not be useful as a group activity.
- If you wish to use this as a group activity, consider bringing errors from past classes to give to the students to identify
    - In this case this activity could be used pre-evaluation to ensure that students are ready.
- The debrief of this activity is key to making sure the students come away with an accurate picture of what you want them to learn.
- Instructors could also consider allowing students to carry out this activity and report back on what they learned as a way to earn lost points on an assessment.

Example Prompts

- I was asked, 'If the wage rate decreases by 8% and the quantity of labor demanded increases by 4%, what is the labor elasticity?' I responded, '.5.' Why is that wrong?
    - Can you provide more details on a step-by-step basis?

PART III

USING GENERATIVE AI TO SUPPORT YOUR TEACHING PRACTICE

HOW CAN YOU BE USING GENERATIVE AI TO SUPPORT YOUR TEACHING PRACTICE?

In all the talk about Generative AI and student use, it can be easy to overlook that Generative AI has plenty of uses for faculty themselves. However, before diving in and starting to use Generative AI for your own work, it is important to make sure you have an appropriate level of information literacy around Generative AI, so you are aware of both the strengths and weaknesses, the opportunities and potential problems.

How do Generative AI programs based on Large Language Models (LLMs) work?

> When you ask generative AI a question, it builds an answer by scanning the vast library of information it has been trained on. The program composes an answer based on patterns in the information it has been fed. This is often described as a predictive text process where the Generative AI completes its answer using the next logical word based on the patterns it finds. As a result, sometimes the answer it pulls together is grammatically correct, but not factually correct.[1]

What are some limitations of Generative AI[2]

Content generated by Generative AI has issues of **reliability, authority**, and **bias**, that mean it cannot replace traditional research.

- **Reliability**: Generative AI builds its responses based on calculation of what the next logical word will be, it sometimes produces grammatically correct but factually incorrect content.
    - Be aware of any citations generated by Generative AI programs.
        - Some programs (Microsoft Copilot) provide links to web sites where information has been source. These links should always be **examined and evaluated**.
        - Other programs have been known to provide false references to materials that don't actually exist.
- **Authority**: Because details on the information that a Generative AI program has been trained on are not

1. NSCC. (2023). Responsible Use of Generative AI. CTL Teaching Commons. https://nscc.sharepoint.com/sites/TeachingCommons/SitePages/Responsible-Use-of-Generative-AI.aspx
2. Ibid.

public you cannot verify the source of the answer that it gives you.

- **Bias**: any biases included in the materials that trained your AI program may also be present its responses.

What about Generative AI and Academic Integrity

All staff and students at NSCC are expected to uphold the principles of Academic Integrity. Presenting information that was created by Generative AI as your own, could be considered an act of Academic Dishonestly. Just as we would expect our students to disclose use of Generative AI in an assignment, faculty should do the same. Depending on the context this may need an APA citation or an acknowledgement.

An acknowledgement should include an indication of what product was used, a link to that product and a brief description of how it was used., eg. "created with Microsoft Copilot which was used to brainstorm a structure and revise the writing in the final product".

SOME GENERAL CONSIDERATIONS FOR ALL ACTIVITIES IN THIS SECTION

In each chapter we have tried to focus on giving concise steps and supports for the specific activity being outlined. There are some questions, however that could be applied to most of these activities. These include:

- Will you use this as a pre-class or in-class activity?
- Will you lead students through or have them work in small groups?
- What topic will you focus on and what prompts will you give students?
- What steps will you take to mitigate any errors/bias in Generative AI results?
- Could you adapt this activity to become an evaluation?

What about Generative AI and Evaluation?

One thing you won't find in this book is the suggestion that you use Generative AI for student evaluation. There are two main reasons for this:

Intellectual Property: Many Generative AI programs continue to build and refine their language models with the prompts and information that are input into them. Though it is tempting to think of using Generative AI to assist with feedback or

Student Trust:

CHAPTER 11

Overcoming Writer's Block

PURPOSE FOR FACULTY USE: USE GENERATIVE AI TO START OR RESTART WRITING PROJECTS

Teaching involves a lot of writing – whether for presentations, assignment briefs, lecture notes, reference letters or any number of other things. Writer's block can be a time consuming process in a busy teaching schedule. Often you know exactly what it is you want to say or explain, but get caught up that you just can't get it right. Although tricks like starting by writing informally, and freewriting that is more stream-of-consciousness than directed can help us start, Generative AI can provide a different starting point to help you along.

CONSIDERATIONS

- Academic Integrity should be top of mind in using this technique. Include an acknowledgement of any use of generative AI that specifies how it was used.
- Use of Generative AI to create content may limit your ability to claim something as your own Intellectual Property or to share it through Open Licenses. These are topics that are still being debated.

Example Prompts

- Explain [*term related to your subject*] in language suited to an introductory level college course.
- Give me an analogy to explain [*topic in your subject*] to first year college level students.

CHAPTER 12

Find Elusive Terms

PURPOSE FOR FACULTY USE: USE GENERATIVE AI TO FIND TERMS YOU'VE TEMPORARILY FORGOTTEN.

All of us have experienced that moment of frustration when a word, name, or term is just on the edge of our memory, but we can't quite retrieve it. This phenomenon is termed "tip-of-the-tongue (TOT)" (or lethologica) and it defines that state when we're able to recall some features of the term—like the first letter, the number of syllables, or a similar sound, word, or meaning—but the rest of it remains elusive.

One of the first studies that looked at the TOT phenomenon was conducted in 1966 by Roger Brown and David McNeill who found this phenomenon occurred about once in every 50 questions and often the elusive term was one that was foreign, long, or used infrequently.

Compared to most search engines, Generative AI is a much more effective tool for helping with this kind of recall and provides a much more thorough response. By demonstrating to students how to input an explanation for the term or concept they're attempting to retrieve, you'll show them how to lessen that frustration and find answers quickly.

Example Prompts

- Evolution is not a smooth curve. When graphed, the curve takes turns plateauing and accelerating. What's this called?
- What is the term for relapsing into criminal behavior?
- What's the fancy term for throwing someone out a window?

CHAPTER 13

Multiple-Choice Question Generation

PURPOSE FOR FACULTY: QUICKLY GENERATE QUESTIONS THAT CAN BE USED IN A MULTIPLE CHOICE QUIZ

One of the most commonly used assessment tools is the multiple-choice question. While they can be time-consuming to create—especially when we're focused on generating plausible "wrong" answers. Generative AI can assist instructors in generating all sorts of multiple-choice questions that allow them to consider content in a variety of ways.

CONSIDERATIONS

- Review any questions and answers that Generative AI creates for you to ensure that the questions are clearly formed and correctly answered.
- You may need to engage in a dialogue with Generative AI to make corrections to any errors you note
- Although multiple-choice quizzes are used for evaluation, they are not the most authentic way to test student ability to meeting learning outcomes. Consider only using multiple-choice questions to help assess student understanding of details but create more authentic evaluations for grading.
    - The Centre for Teaching and Learning can assist you with developing authentic evaluations.

Example Prompts

Version History

Using Generative AI in Your Classroom: Ideas for Activities and Assignments was inspired by, with content adapted from, ChatGPT Assignments to Use in Your Classroom Today by Kevin Yee, Kirby Whittington, Erin Doggette, and Laurie Uttich published by FCTL Press shared under a CC BY-NC-SA license as a PDF.

CHANGES

- New title
- Condensed remixed edition with new content.
- Chapters used reorganized into 3 new sections.
    - Original book used 7 different categories.
    - 36 of 59 chapters selected for inclusion.
- Chapters renamed to remove section title information from chapter title.
- Formatting added to chapter presentation:
    - Hierarchical tagging added
    - Prompt examples placed in example boxes to highlight content.
- Focus taken off ChatGBT. Generic term Generative AI is used with prompt suggestions broad enough that they should be useful in any number of Large Language Model (LLM) type AI.
- Sections have a new short introduction on important background and rationale.
- The activities have been adapted to be relevant to NSCC courses and student/faculty need.

CHAPTER MAPPING

	NSCC Title: Using Generative AI	ChatGPT Assignments to Use in Your Classroom Today – **Chapters Included and Adapted**
	About the Book	
	Introduction	Introduction
I	Activities to Help Students Understand Generative AI	**Chapter adapted from ChatGBT**
1	Conversation	1.Conversation
2	Regenerate a Response	2. Regenerate a Response
3	Rephrase Prompts	3. Rephrase Prompts
4	Context and Specific Requests	4. Context and Specific Requests
5	Tone, Style & Sophistication	5. Tone, 6. Specified Style & 7. Sophistication (3 chapters combined)
6	Length	8. Length
7	New Chat	9. New Chat
8	Hallucinated Sources	13. Hallucinated Sources
9	Bias	19. Bias
II	Activities to Get Students Using Generative AI	
10	Explanations for Wrong Answers	11. Explanations for Wrong Answers
11	Introducing Topics (new name for Seminal scholars)	12. Seminal Scholars, Studies, and Other Materials
12	Brainstorming a Topic	27
13	Role Play	45
14	Create Study Plans	52
15	Request Definitions, Synonyms, and Antonyms	28
16	Business Ideas	46
17	Summarize Longer Texts	21
18	Question Creation	53
19	Slogans	47
20	Generate an Outline	31
21	Create Counterarguments	32
22	Social Media Posts	48
23	Find Elusive Terms	55
24	Critique and Interpret	22
25	Flashcard Generation	57
27	Convert to Conversational Language	23
27	Grammar and Syntax Check	40
28	Time Management	58
29	Analyze Readability and Tone	41
30	Career Paths	59
III	Using Generative AI to Support Your Teaching Practice	
31	Correctness	13. Correctness
32	Soundness of the Argument	14. Soundness of the Argument

33	Write a Rebuttal	18. Write a Rebuttal
34	Multiple-Choice Question Generation	54
35	Overcoming Writer's Block	26
36	Improve Prose	42

Glossary

Adobe Firefly
an image-generating AI created by Adobe Sensei; trained only on licensed images and public domain content

Bard
a text-generating AI created by Google using LaMDA technology; interacts with the web

Bing Chat
See Microsoft Copilot

BlenderBot
a text-generating AI created by Meta; the latest version (BlenderBot 3.0) interacts with the web

ChatGPT
a text-generating AI chatbot created by OpenAI. Currently, only the paid version interacts with the web,

DALL·E
an image-generating AI created by OpenAI

ErnieBot
a text-generating AI (in Mandarin) from Chinese search engine Baidu

Falcon AI
a text-generating AI created by UAE's Technology Innovation Institute; transparent, open source, trained on RefinedWeb, a custom-made dataset

Jasper
a for-pay text-generating AI aimed at businesses and blog posts

LaMDA (Language Model for Dialogue Applications)
a LLM trained specifically on dialogue, such as Google's Bard

LLM (Large Language Model)
a type of software / AI that accesses large databases it's been trained on to predict the next logical word in a sentence, given the task/question it's been given. Advanced models have excellent "perplexity" (plausibility in the word choice) and "burstiness" (variation of the sentences).

Microsoft Copilot
a text-generating AI created by Microsoft based on the GPT-4 model; interacts with the web. Originally called Bing Chat. Rebranded as Copilot in November 2023.

Midjourney
an image-generating AI; interacts with Discord

NightCafe
a free image-generating AI; uses Stable Diffusion algorithms to produce low-resolution images

OpenAI
the company that created ChatGPT and DALL-E

Stable Diffusion
an image-generating AI created by the startup Stability AI

Sydney
the name of the AI that supports Microsoft's Bing search engine

xAI
the ChatGPT competitor launched by Elon Musk