

Faculty conversation



Writing and designing prompts for teaching and learning activities with generative AI

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Wednesday, 28 August 2024
10:00-11:15 am
E3-1032

Include course policy on AI in syllabi

From UM's 'Guidelines on the Use of Generative Artificial Intelligence Tools'

RTO.04/202407/106.r01

<https://webdocs.um.edu.mo/sites/governance/All%20documents/Guidelines%20on%20the%20Use%20of%20Generative%20Artificial%20Intelligence%20Tools.pdf>

Academic staff should update their syllabi to include a course policy on the use of GenAI. The policy should be specific about how the use of GenAI is or is not allowed in the course, as this provides transparency for students and academic staff when matters of academic integrity arise. In general, there are three permission levels:

- i) Use of GenAI is permitted within the course policy;**
- ii) Use of GenAI is permitted in certain circumstances or with explicit permission;**
- iii) Use of GenAI is prohibited.**

Declaration statements for students

From UM's 'Guidelines on
the Use of Generative
Artificial Intelligence
Tools'

RTO.04/202407/106.r01

[https://webdocs.um.edu.mt/sites/governance/All%20Documents/Guidelines%20on%20the%20Use%20of%20Generative%20Artificial%20Intelligence%20Tools.p](https://webdocs.um.edu.mt/sites/governance/All%20Documents/Guidelines%20on%20the%20Use%20of%20Generative%20Artificial%20Intelligence%20Tools.pdf)

[df](#)

**I acknowledge the use of [name of AI tool(s) and
hyperlink] to**

- 1. generate materials for background research and independent study.**
- 2. generate materials that I have adapted to include in this submission.**
- 3. help me copy-edit and/or proofread my writing in this submission.**






Students can access Copilot at genai.um.edu.mo, available 2 hours post-tutorial completion.

UM version: Copilot with commercial data protection

ICTO FAQs on GenAI at <https://faq.icto.um.edu.mo/category/teaching-learning/genai-teaching-learning/>

See bulletin "**Generative Artificial Intelligence Tool (Microsoft Copilot) is now available!**" RTO 2024-08-12
<https://e-bulletin.um.edu.mo/notice/264806/>

Talking points

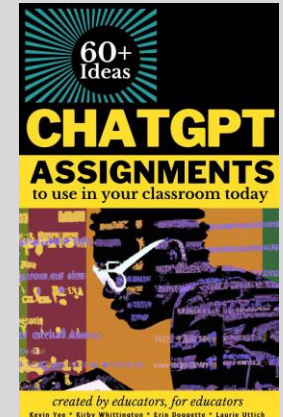
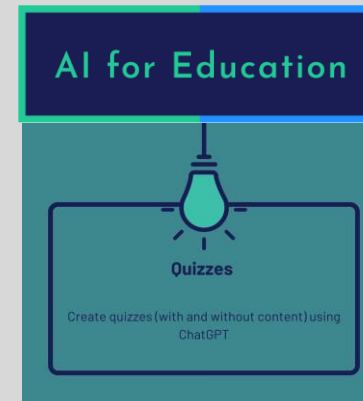
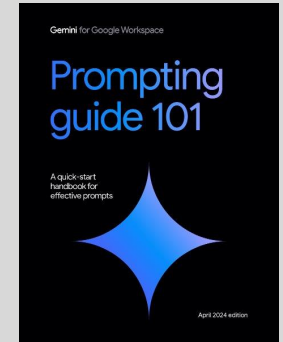
-  Sharing: Our activities and insights
-  Good quiz making principles
-  Case: Writing MC quiz questions
 -  Sharing: What to include in a prompt?
 -  Discussion: Gen AI for other types of T, L & A activities?

What is an aspect of generative AI is crucial for educators?

- effective prompts are essential to getting good output
- a few guides to writing prompts are available

* <https://www.aiforeducation.io/prompt-library-assessment>

- ✨ Copilot has a context window of **3000** words
- Claude Sonet **75,000**; Gemini **700,000**



Poll



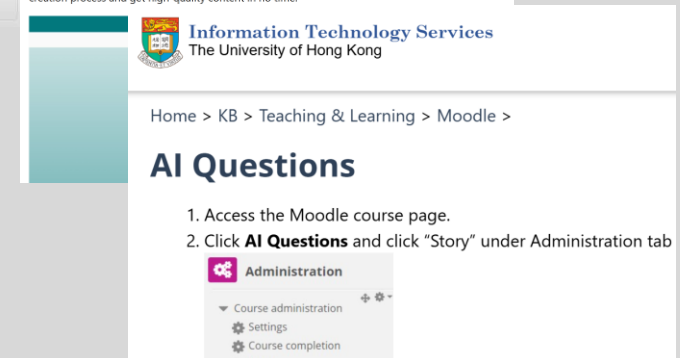
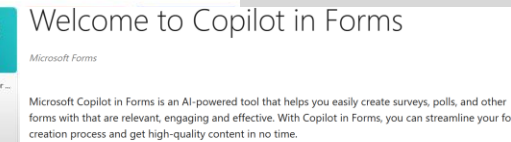
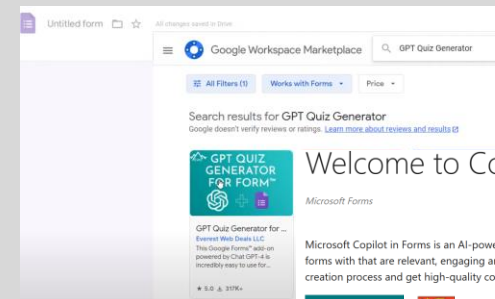
Which teaching activities
have/would you like to prepare
with the assistance of genAI?

🌟 A starting point: writing MC quiz questions

Many **services** offer to generate quiz questions

- (+) Exciting/gamified, quick
- (-) Costly, not quite right level or content

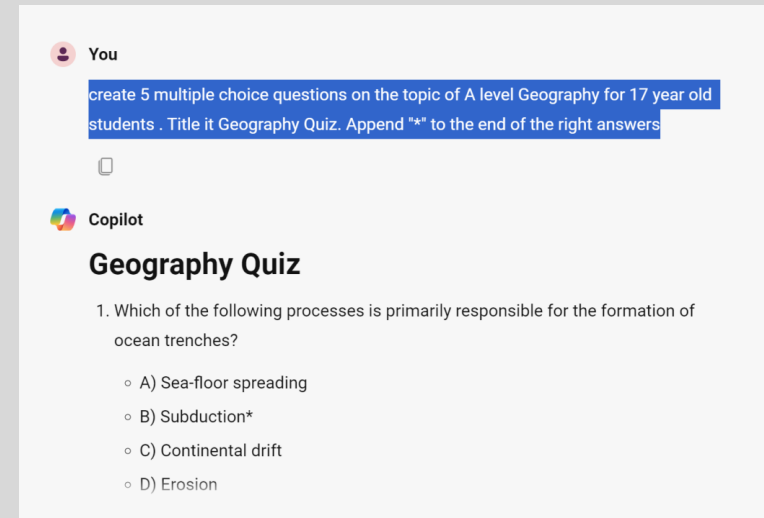
👉 Experience with any AI quiz generating systems?



A starting point: writing MC quiz questions

DIY approach: ChatGPT, Claude, Copilot, etc.

- (+) *possibly* more relevant questions for our learners
- (-) Requires designing prompts, limited access to 🔥 systems



The screenshot shows a chat interface with a user prompt and a Copilot response. The user prompt is: "create 5 multiple choice questions on the topic of A level Geography for 17 year old students . Title it Geography Quiz. Append '**' to the end of the right answers". The Copilot response is titled "Geography Quiz" and contains the following question: "1. Which of the following processes is primarily responsible for the formation of ocean trenches?" with four options: "A) Sea-floor spreading", "B) Subduction*", "C) Continental drift", and "D) Erosion".

You

create 5 multiple choice questions on the topic of A level Geography for 17 year old students . Title it Geography Quiz. Append "**" to the end of the right answers

Copilot

Geography Quiz

1. Which of the following processes is primarily responsible for the formation of ocean trenches?

- A) Sea-floor spreading
- B) Subduction*
- C) Continental drift
- D) Erosion



What are quiz making principles/practices?

Objectives and Question Types

- Define Clear Objectives
 - Align with learning goals
 - Focus on key concepts
- Use a Variety of Question Types
 - Multiple-choice
 - True/False
 - Matching
 - Fill-in-the-Blank

Instructor



AI



Instructor + AI

Passage:

The Sustainable Development Goals (SDGs) are 17 core goals adopted by the United Nations in the "2030 Agenda for Sustainable Development". These goals play an important guiding role in the action plans of governments, enterprises, and institutions to solve global environmental, economic, and social problems. The "Global Schools Pledge" is a non-credit certificate provided by the Global Schools Program to encourage primary and secondary schools to actively learn and take action on sustainable development goals.

#4 What are the Sustainable Development Goals (SDGs) mentioned in the article?

- A. 27 core goals adopted by the United Nations
- B. 10 core goals adopted by the United Nations
- C. 17 core goals adopted by the United Nations
- D. 5 core goals adopted by the United Nations

Answer: C

- No English comprehension ability needed
- For language tests, first few sentences are generally not tested (context setting purpose).

#1 What is the purpose of the "Global Schools Pledge" mentioned in the article?

- A. To discourage schools from learning about sustainable development goals
- B. To provide credit certificates to schools for their efforts in teaching sustainable development goals
- C. To provide non-credit certificates to encourage schools to actively learn and take action regarding sustainable development goals
- D. To provide financial incentives to schools for implementing sustainable development goals

Answer: C


Good or bad questions?

Background: These two English language comprehension questions were generated by ChatGPT3.5 and 4.0

1. Are #4 and #1 good or bad questions? Why?

- 3 options begin with "to provide," so the answer is likely one of these
- Correct answer is the longest
- "C" takes phrases directly from the passage, after "Global Schools Pledge,": "non-credit," "encourage...schools," "actively learn," "take action... sustainable development goals"

Question Design and Review

	Instructor	AI	Instructor + AI
◦ Write Clear and Concise Questions			
◦ Avoid ambiguity (≠ Which of the following is NOT...)			
◦ Use simple language (paraphrases, not direct quotations from text)			
◦ Design Effective Answer Choices			
◦ Plausible distractors			
◦ Avoid patterns (length, word)			
◦ Balanced options			
◦ Review and Revise			
◦ Peer review			
◦ Pilot testing			

Fairness, Instructions, and Integrity

- Ensure Fairness and Accessibility
 - Cultural sensitivity
 - Accessibility
- Provide Clear Instructions
 - Detailed instructions
 - Examples
- Balance Difficulty and Coverage
 - Range of difficulty
 - Range of coverage
- Maintain Academic Integrity
 - Randomize questions
 - Secure environment

Instructor




AI

Instructor + AI



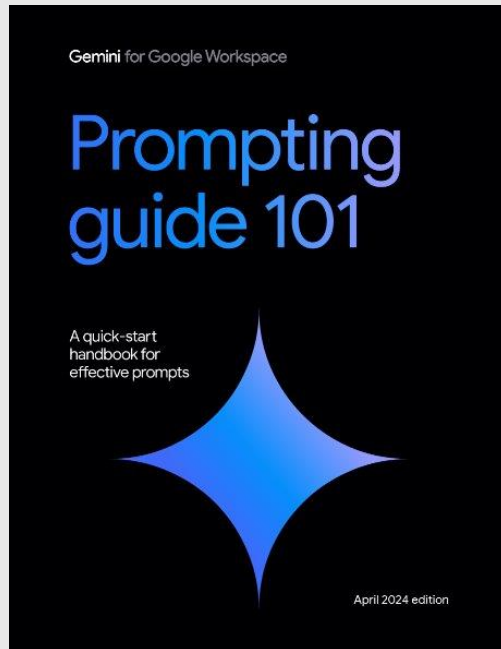
Moodle can do this, mostly.



Case: Creating MCQs for an online training module

a DIY approach to quiz questions

Writing prompts - tips



There are four main areas to consider when writing an effective prompt. You don't need to use all four, but using a few will help!

- Persona
- Task
- Context
- Format

Here is an example of a prompt using all four areas that could work well in Gmail and Google Docs:



You are a Google Cloud program manager. Draft an executive summary email to [persona] based on [details about relevant program docs]. Limit to bullet points.

Example prompt & tips

- ✓ **Task: Based on a text...**
- ✓ **Context...**
- ✓ **Stated desired language level**
- ✓ **Statement regarding length of distractors**
- Includes a hint, for Interactive Format in Moodle
- **Review and revise questions**
- Generate pictures to enhance quiz
- Get output in AIKEN or XML for importing into Moodle

- Create 10 multiple-choice questions **based on a script and reading (text attached)** for new teaching assistants at a university.
- Five of the questions based on a script should be **from the perspective of** a teaching assistant and another five questions should be **about things that a teaching assistant should do** to be successful.
- **Group the questions that are similar** based on their content, considering mainly the subject matter or content.
- The questions should be **phrased at a level for a student with a B1** or B2 CEFR English proficiency.
- Provide the answer to each question below each question. **The correct answer should have less words than the distractors.**
- For each question, after the answer, write one hint that would help a student choose the correct answer. The hint should not give the answer away but rather, the hint should stimulate the student to think about the concept behind the quiz question. The hint should be written in a way that a student with a language level of B1 CEFR can understand.

Output

Anthropic. (2024). Claude-3.5-Sonnet [Large language model].

<https://claude.ai/chat/a8d6344e-8b0b-40c1-9e17-2ed30bbda854>

Image: Firefly

Group 3: Promoting Academic Integrity

5. How can a teaching assistant help prevent academic dishonesty?



- A) Reuse old assignments and exams
- B) Ignore small instances of cheating
- C) Create new assignments for each class
- D) Allow students to work together on all tasks

ANSWER: C) Create new assignments for each class

Hint: Think about how familiarity with old materials might tempt students to cheat.



Talking points

Discuss in groups of 2-3

- Persona
- Task
- Context
- Format

3-minutes

For more applicable results, what other aspects might be specified in prompts to...

1. create an assessment?

- Level of difficulty/cognitive dimension (Bloom), Focus of assessment, Language level?

2. evaluate an assessment?

- Rate each question on...





How to evaluate quiz questions?

Structural analysis for question number 1

Download table data as

Comma separated values (.csv)

Download

Q#		Question name	Attempts	Facility index	Standard deviation
1		Random (Unit 1 Questions)	1254	92.74%	25.95%
1.1		1.1 NOT mentioned as a limitation of AI?	847	93.74%	24.23%
1.2		1.2 check an AI chatbot's responses?	835	95.81%	20.05%
1.3		1.3 major limitation of AI is that it can generate:	826	87.77%	32.78%

- Use the quiz statistics report in UMMoodle
 - https://docs.moodle.org/404/en/Quiz_statistics_report
- Attempt to answer questions (and assessments) with Copilot with commercial data protection

How to evaluate quiz questions?

Emerging research on the topic

- Gorgun, G., Bulut, O. Exploring quality criteria and evaluation methods in automated question generation: A comprehensive survey. *Educ Inf Technol* (2024). <https://doi.org/10.1007/s10639-024-12771-3>
- Hwang, K., Challagundla, S., Alomair, M., Chen, L. K., & Choa, F. S. (2023). Towards AI-assisted multiple choice question generation and quality evaluation at scale: Aligning with Bloom's Taxonomy. In *Workshop on Generative AI for Education*. https://gaied.org/neurips2023/files/17/17_paper.pdf#page=3.92
- Bloom's Taxonomy alignment
- Alignment with learning objectives and outcomes
- Cultural sensitivity

Remarks on teaching practices

Ways to use the quiz questions:

- ✓ Low-stakes checkpoints
- ⚠ Carefully evaluate AI-generated questions for high-stakes exams or final assessments
- 💡 Other assessment types that support learning and measure achievement



Talking points

Choose one to discuss in groups of 2-3

3-minutes

- What are other ways of using generative AI for *creating* learning activities? Games, etc?
- Ways forward with assessment?

Smith, D. & Francis, N. (2024). Process not product in the written assessment. In Beckingham, S., Lawrence, J., Powell, S., & Hartley, P. (Eds.). *Using Generative AI Effectively in Higher Education: Sustainable and Ethical Practices for Learning, Teaching and Assessment* (1st ed.). Routledge. <https://doi.org/10.4324/9781003482918>

Summary

Shared our various practices

Looked at:

- Quiz making principles
- Writing prompts

Discussed: Gen AI for other types of activities

- ✓ Leave with more ideas on how to make use of generative AI for T, L & A

Events

CTLE Half-day Professional Development Event

Strategies of Interactive Lecturing

Keynote:
Dr. Deborah BREEN
Boston University, United States



Faculty Sharing:
Prof. Nick Groom (FAH)
Prof. Hongyu WANG (FSS)
Prof. Leo Tsz On LEE (FHS)
Moderated by Prof. Katrine WONG

Technology Session:
Dr. Christopher FULTON

Date: **11 Sep 2024** | Time: **9:30AM - 12:30PM** | Venue: **E3-1032** | Register: 



CTLE PROFESSIONAL DEVELOPMENT SEMINAR

REMOVING BARRIERS TO LEARNING WITH UNIVERSAL DESIGN PRINCIPLES



SPEAKERS:
DR. CAROLYN ASLAN 
MS. JULIE RUMMINGS 
CORNELL UNIVERSITY, UNITED STATES

*LIGHT LUNCH WILL BE PROVIDED AFTER THE SEMINAR.
**PARTICIPANT WILL GET 1 PD HOUR FOR ATTENDING THE SEMINAR.

DATE: **23 OCTOBER 2024** | TIME: **10:00AM - 11:30AM** | VENUE: **E3-1032** | REGISTER: 

