

AI Amplified Learning: Discipline-Specific Strategies Workshop



Welcome & Introduction (10 minutes)



Overview of AI Principles for Education (20 minutes)



Discipline-specific breakout rooms (75 minutes)



Thank you and conclusion (15 minutes)



Overview of AI in Education



How do other instructors feel about AI?

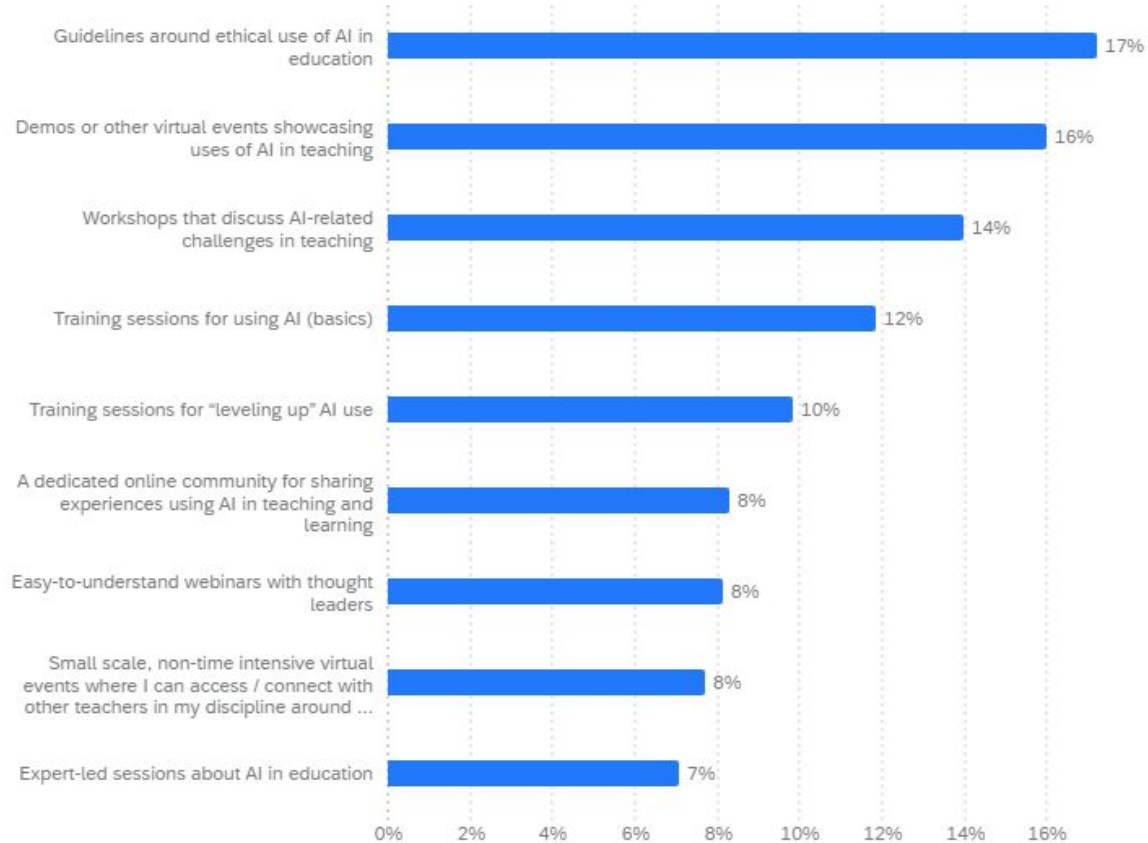


“I recently took an online course about AI in Education. It really helped me shift my mindset from dismissive to absolutely amazed and excited about the possibilities. However, I just do not have enough training on AI tools myself to incorporate it confidently into my classroom yet. I need more help with that and more capabilities from course content creators e.g., book publishers to integrate generative AI within my LMS or within some other platform.”

“Those of us teaching in the humanities really need ways to quickly and positively detect AI as my colleagues and I are constantly talking about how much time we must spend trying to detect submissions we know are AI generated. Please help. We are all burning out!”

“I am a 24-year college prof in literal hell. I teach Communication Studies. I do metacognitive practices, culturally responsive practices, active learning, etc. I have degrees in post-secondary education and communication. I know the “right” things to do. The “right” things are no match for AI. My students are using AI for even personalized work. It is like nothing I have ever seen and I am at a loss for how to combat it. What do we do when known good pedagogy has to be thrown out the window? What do we replace or with?”

What kinds of AI support do instructors ask for?



An illustration of five diverse graduates in caps and gowns, representing various ethnicities and genders. The graduates are shown from the chest up, wearing their academic regalia. The background is dark with subtle patterns.

Using AI to inspire what's possible for every learner

The Macmillan Learning approach to generative AI is human-centered, **designed to amplify human potential, not replace it.**

OUR APPROACH TO AI

The way we approach innovating with AI reflects our commitment to enhancing human potential through technology. We aspire to **lead with empathy, innovate with purpose, and create with integrity.**

See: [Our Guiding Principles for Leveraging AI](#)





Susan Winslow
CEO, Macmillan Learning

“

*There are enough people training
the AI how to learn.
Our job is to help humans learn.*

”



Charles Linsmeier
General Manager, Macmillan Learning

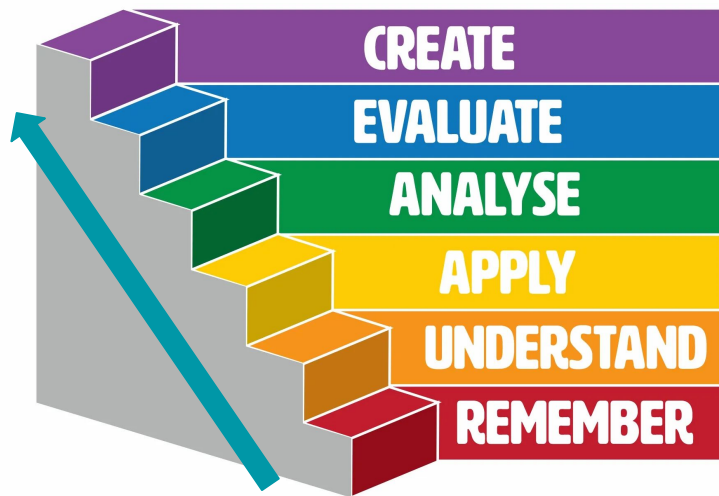
“

*The litmus test for any AI application in education is this: **does it augment learning and advance human endeavors?***

”

Adapt Your Own Resource Using AI!

BLOOM'S TAXONOMY



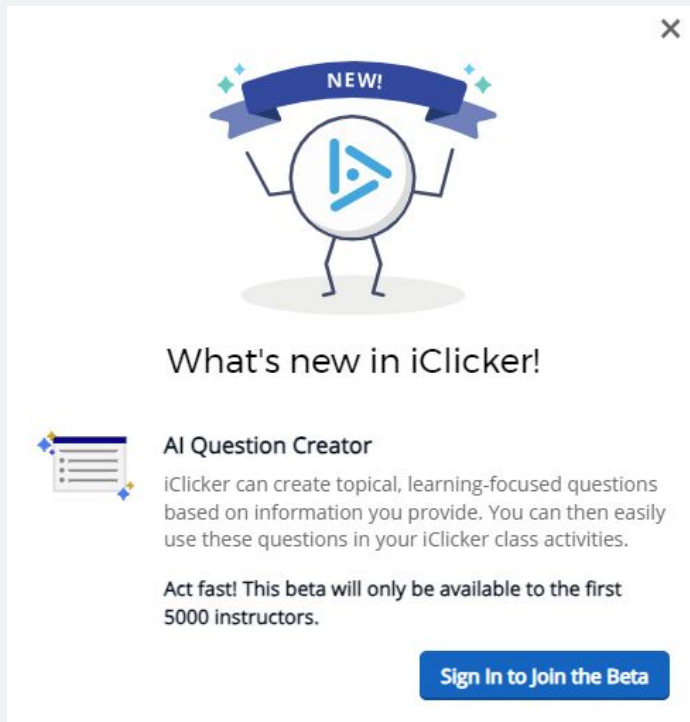


Discipline Specific Breakouts



Easy Way to Incorporate AI

iClicker AI Question Creator



A promotional graphic for the iClicker AI Question Creator. At the top right is a close button (X). In the center is a cartoon character with a circular body containing the iClicker logo, arms raised, and a blue banner above its head that says "NEW!". Below the character is the text "What's new in iClicker!". To the left of the next section is a small icon of a document with a list. The section is titled "AI Question Creator" and contains a paragraph of text. Below the paragraph is another paragraph of text. At the bottom right is a blue button with white text.

NEW!

What's new in iClicker!

AI Question Creator

iClicker can create topical, learning-focused questions based on information you provide. You can then easily use these questions in your iClicker class activities.

Act fast! This beta will only be available to the first 5000 instructors.

[Sign In to Join the Beta](#)

Discipline Specific Breakout Activity Decks

- [Cross-Discipline](#)
- [Biology](#)
- [Business](#)
- [College Success](#)
- [Communication](#)
- [Econ](#)
- [Engineering](#)
- [English](#)
- [History](#)
- [Math/Stats](#)
- [Nursing](#)
- [Physics](#)
- [Psychology](#)

AI Amplified Learning

Cross-Discipline

Leslie Allen-Essex

Step 1: Select an existing assignment

PEER CONSULTANT: Describe your selected activity here.

OR

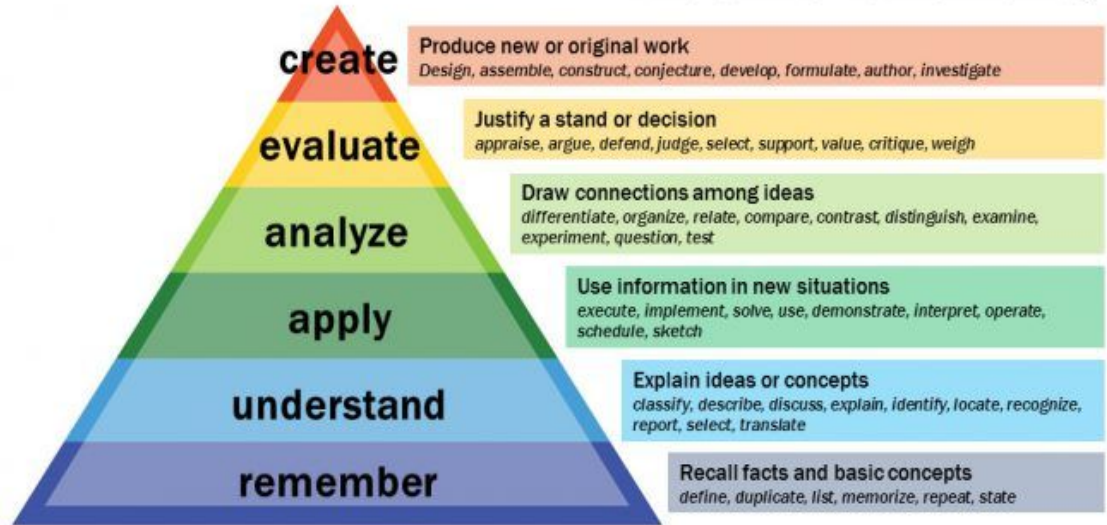
NO PEER CONSULTANT

Identify an assessment that you use that is currently a lower Bloom's level. This could be:

- An in-class activity
- An exam question
- A paper
- A homework assignment

Have one in mind? Great!

Bloom's Taxonomy



**What activity are you
planning to update?**



Step 2: Analyze the task

Use AI to dissect the components of a lower-level activity or question. Through dialogue with AI, analyze these components to identify associated cognitive skills, which will inform the adaptation of the task to a higher level.

To create your prompt:

1. **Provide Context:** Start by explaining the activity or question you want AI to analyze. For instance, "I need assistance with a task where students define and explain [concept or topic]. Can you help identify the skills involved?"
2. **Clarify the Task:** Clearly outline the task. For example, "Students are tasked with defining [concept or topic] and explaining the process in simple terms."
3. **Describe Components:** Break down the task components, for example, "Can you help me break down its components to see what skills are involved?"
4. **Ask for Analysis:** Prompt AI to analyze these components: "Could you break down each component and discuss the cognitive skills required for students to achieve them?"
5. **Engage in Dialogue:** Interact with AI as it analyzes each component. Pose follow-up queries to deepen the analysis.

Step 3: Identify higher level Bloom's Verbs

Look for higher-level Bloom's verbs for applying or analyzing the concept. For applying, verbs like "demonstrate," "apply," "illustrate," or "use" are appropriate. For analyzing, verbs like "analyze," "evaluate," "synthesize," or "compare" are good fits.

To create your prompt:

- 1. Provide Context:** Start by providing context about the lower-level activity you've analyzed. For example: "I have analyzed a task where students define and explain [concept or topic]. Now, I want to adapt it to target higher-level thinking. Can you suggest appropriate Bloom's Taxonomy verbs for this?"
- 2. Specify the Goal :** Clearly state your goal of incorporating higher-level Bloom's Taxonomy verbs into the adapted activity. For example: "I want to encourage students to apply or analyze [concept or topic] rather than just recalling and understanding it."
- 3. Request Suggestions:** Prompt AI to suggest appropriate Bloom's Taxonomy verbs that align with your goal. You can say something like: "Could you suggest verbs that would prompt students to apply or analyze [concept or topic] in a higher-level activity?"
- 4. Evaluate Suggestions:** Evaluate the suggestions provided by AI and consider how each verb aligns with your goal of targeting higher-level thinking in the adapted activity.

Step 4: Transform the task

Rewrite the question or activity to incorporate higher-level Bloom's verbs.

Refine Instructions: Based on the suggestions provided by AI, refine the instructions to incorporate the selected higher-level Bloom's Taxonomy verbs. Ensure that the language used is clear, concise, and conducive to promoting higher-level thinking. Consider the following approaches:

- 1. Provide Contextualization:** Prompt AI with the concept or topic you're teaching and ask for real-world scenarios or examples that demonstrate its relevance. For example, "Can you share real-world examples to demonstrate the practical relevance of [concept or topic]? This aids student understanding."
- 2. Incorporate Multifaceted Approaches:** Ask AI for suggestions on how to diversify the assignment to encourage students to approach it from multiple perspectives or through various modes of inquiry. For instance, "How can I design this assignment to encourage students to analyze data, conduct research, engage in debates, or create multimedia presentations?"
- 3. Require Justification or Explanation:** Prompt AI to suggest ways to incorporate justification or explanation requirements into your assignment instructions. You might ask, "How can I modify the assignment instructions to prompt students to justify their responses or explain their reasoning?"
- 4. Create Authentic Assessment Tasks:** Ask AI about designing assessment tasks that mirror real-world challenges or problems relevant to the concept. You can say, "I want to create assessment tasks that simulate real-world challenges related to [concept or topic]. How can I design tasks that require students to apply their knowledge in meaningful contexts?"

Did your prompt give you any results that were exciting or surprising? If so, what was it?



Step 5: Assess the new task

Plan assessment for the higher-level task. Consider criteria like critical thinking, depth of analysis, evidence use, and argument coherence. Use AI feedback to refine rubrics, ensuring clarity, specificity, and alignment with learning outcomes. Adjust as needed to support higher-level thinking.

- 1. Align to Learning Outcomes:** Ensure that the refined activity aligns with your course's learning outcomes or objectives related to higher-level thinking skills. Clearly communicate to students how the activity contributes to their overall learning goals. "Can you help ensure my activity aligns with higher-level thinking objectives? Also, how can I clearly communicate its importance to students' overall learning goals?"
- 2. Discuss Criteria and Levels of Performance:** Engage in a dialogue with AI to discuss the criteria for assessment. Prompt to AI: "Can you provide insights on the criteria for assessment and the levels of performance within each criterion for evaluating students' performance at a higher-order Bloom's level? Specifically, what distinguishes excellent, proficient, basic, and inadequate performance?"
- 3. Create or Refine Rubrics/Criteria:** Based on the AI feedback, develop clear criteria or rubrics for assessing students' performance on the refined activity. Clearly outline expectations for higher-level thinking skills such as analysis, synthesis, and evaluation, and provide examples of exemplary responses.

Step 6: Feedback and Reflection

After students complete the new task, provide feedback that helps them understand the strengths and areas for improvement in their application or analysis of the concept. Encourage reflection on their thinking processes and strategies used.

Prompt: "After students complete the adapted task, what type of feedback would be most helpful in guiding their understanding of the concept and their higher-level thinking skills?" Consider the following ideas:

Clarification and Explanation: Clarify any misconceptions and explain key concepts clearly to enhance understanding.

Highlight Strengths and Address Weaknesses: Recognize strengths in higher-level thinking skills and provide specific examples. Address areas for improvement with constructive feedback and actionable suggestions. Offer specific suggestions for enhancing critical thinking, problem-solving, or analytical skills, focusing on actionable steps for improvement.

Encourage Reflection: Prompt students to reflect on their approach to the task. Encourage metacognition with questions like: 'How did you tackle the problem? What strategies were effective? How could you approach it differently next time?'

Promote Self-Assessment: Encourage students to self-assess their performance against the criteria and standards set for the task. Provide tools or checklists for self-assessment and encourage students to reflect on their strengths and areas for improvement.

Foster Growth Mindset: Encourage a growth mindset by highlighting the value of perseverance and effort. Reinforce the idea that challenges are opportunities for learning and improvement and provide positive reinforcement for their efforts and progress.

AI Amplified Learning

Biology, Biochemistry, Chemistry, Nutrition

Stephen Henry

Maureen Rachford

Build Your Own Resource Workshop

USING A.I. in STEM to

- I. Create quiz questions
- II. Calculate Chi-Square
- III. Generate PowerPoints



*Generated in Microsoft Creator

QUIZ QUESTIONS - **Remember** - down at the pyramid base Using free version of ChatGPT 3.5 version.

User

Generate three multiple choice questions about the light reactions of photosynthesis with the markdown format with an asterisk in front of the correct answer choice using Respondus 4.0 formatting



ChatGPT

Certainly! Here are three multiple-choice questions about the light reactions of photosynthesis formatted in Markdown with an asterisk (*) in front of the correct answer choice, suitable for Respondus 4.0 formatting:

markdown

 Copy code

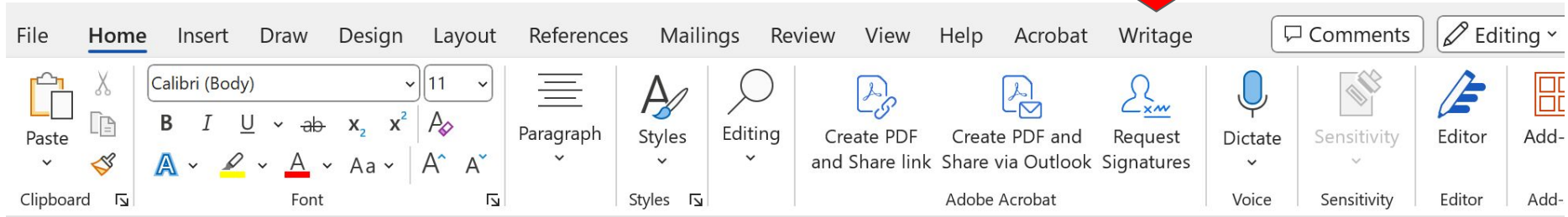
```
### Multiple Choice Questions on Light Reactions of Photosynthesis
```

```
1. Question 1:
```

```
During the light reactions of photosynthesis, where is the primary site of ATP syn
```

- a) Stroma
- b) Thylakoid lumen
- c) Intermembrane space
- ***d) Thylakoid membrane**
- e) Matrix

Pasting ChatGPT A.I. response to Microsoft word using Markdown format and Writage



Question 1: During the light reactions of photosynthesis, where is the primary site of ATP synthesis?

- a) Stroma
- b) Thylakoid lumen
- c) Intermembrane space
- *d) Thylakoid membrane
- e) Matrix

Writage is a free Markdown plugin for
Microsoft word to paste ChatGPT response

QUIZ QUESTIONS - **Understand** - moving up the pyramid

S

You

List sequence of events from Acetylcholine release to muscle contraction



ChatGPT

The sequence of events from acetylcholine release to muscle contraction involves several steps in neuromuscular transmission. Here's a simplified overview:

1. **Action potential reaches the presynaptic terminal:** When a nerve impulse (action potential) reaches the presynaptic terminal (axon terminal) of a motor neuron, it triggers the opening of voltage-gated calcium channels.
2. **Calcium influx into presynaptic terminal:** The opening of voltage-gated calcium channels allows calcium ions (Ca^{2+}) to enter the presynaptic terminal from the extracellular fluid.
3. **Acetylcholine release:** The influx of calcium ions causes synaptic vesicles containing acetylcholine (ACh) to fuse with the presynaptic membrane, releasing acetylcholine into the synaptic cleft through a process called exocytosis.
4. **Acetylcholine binds to receptors:** Acetylcholine diffuses across the synaptic cleft and binds to nicotinic acetylcholine receptors (nAChRs) located on the motor end plate of the postsynaptic membrane of the muscle fiber.
5. **Depolarization of the motor end plate:** Binding of acetylcholine to nicotinic receptors triggers the opening of ligand-gated ion channels, allowing sodium ions (Na^{+}) to enter the muscle fiber and potassium ions (K^{+}) to exit. This results in depolarization of the motor end plate.

Free response:

Flash cards are insufficient

Need to know order of events

QUIZ QUESTIONS - **Apply** - moving up, even more, up the pyramid

S

You

How does botox inhibit muscle contraction



ChatGPT

Botox, or botulinum toxin, inhibits muscle contraction by interfering with the release of acetylcholine (ACh) at the neuromuscular junction. Here's how it works:

1. **Blocking acetylcholine release:** Botox works by specifically targeting the synaptic vesicles within the presynaptic terminal of the motor neuron. It cleaves proteins involved in vesicle fusion with the presynaptic membrane, particularly the SNARE proteins (soluble N-ethylmaleimide-sensitive factor attachment protein receptors). By cleaving these proteins, Botox prevents the fusion of synaptic vesicles with the presynaptic membrane, thereby inhibiting the release of acetylcholine into the synaptic cleft.
2. **Reducing muscle activation:** Without the release of acetylcholine, there is no activation of nicotinic acetylcholine receptors (nAChRs) on the postsynaptic membrane of the muscle fiber. Consequently, there is no depolarization of the motor end plate, and no generation of an action potential in the muscle fiber.
3. **Muscle paralysis:** With the absence of action potentials in the muscle fiber, there is no calcium release from the sarcoplasmic reticulum, and consequently, no initiation of the steps leading to muscle contraction. This results in temporary muscle paralysis in the area where Botox has been injected.

QUIZ QUESTIONS - Evaluate - Almost at the top!

S You

Why would Botox be a poor medicine for lower back pain

ChatGPT

Botox, or botulinum toxin, is primarily used for conditions related to muscle hyperactivity or spasticity, such as dystonia, spasticity after stroke, or certain types of muscle spasms. While it can be effective for conditions where excessive muscle activity contributes to pain or dysfunction, it may not be an ideal treatment for lower back pain for several reasons:

1. **Cause of lower back pain:** Lower back pain can have various underlying causes, including muscle strain, ligament sprain, disc herniation, arthritis, or nerve compression. Botox primarily targets muscle hyperactivity, so if the pain is not primarily due to muscle spasm or excessive muscle activity, Botox may not address the underlying cause effectively.
2. **Limited area of effect:** Botox injections have a localized effect at the injection site. Lower back pain can be diffuse and involve multiple muscles, ligaments, and other structures. Injecting Botox into specific muscles in the lower back may not adequately address the complex nature of lower back pain.
3. **Risk of adverse effects:** Botox injections can have side effects, including muscle weakness, numbness, and pain at the injection site. In the case of lower back pain, where there are critical muscles involved in maintaining posture and supporting the spine, inducing muscle weakness with Botox injections may worsen rather than improve symptoms.

III. Creating oral presentation PowerPoint in STEM classes
Can use a combination of ChatGPT and add figures later
(free).
Another option is to use Google Gemini (free version).

Prompt

Generate a PowerPoint presentation with 5 slides of an ecological disaster such a BP oil spill

Slide 1: Where and When did it occur? Name 5 organisms affected and **show an image of one of them with oil on their skin.**

Slide 2: Is the ecological disaster man-made or not man-made?

Slide 3: How was the disaster repaired or remedied?

Slide 4: Can disasters like this one be prevented in the future.

Slide 5: Are similar disasters increasing or decreasing in frequency

Slide 1: The Deepwater Horizon Disaster

- **Location:** Macondo Prospect, Gulf of Mexico (south of Louisiana)
- **Date:** April 20, 2010 – September 19, 2010 (4 months, 4 weeks, and 2 days)
- **Organisms Affected:**
 - Brown Pelicans (pictured)
 - Dolphins
 - Oysters
 - Sea turtles
 - Fish

Speaker Notes The Deepwater Horizon disaster, also known as the BP oil spill, was an environmental catastrophe that began on April 20, 2010, in the Gulf of Mexico. An explosion on the Deepwater Horizon oil rig, which was leased by BP and operated by Transocean, resulted in the release of millions of barrels of oil into the Gulf waters. The spill had a devastating impact on the



- **Man-Made Disaster**
- The Deepwater Horizon disaster was entirely man-made.
- A series of cost-cutting measures and safety failures led to the blowout.
- BP, Transocean, and Halliburton (who performed cementing work on the well) were all found to be negligent.

Speaker Notes The Deepwater Horizon disaster was a preventable accident caused by human error and a culture that prioritized profits over safety. Investigations revealed that several factors contributed to the blowout, including:
* A flawed well design * Improper well cementing * Failure to properly conduct well control tests * Ignoring critical safety warnings These failures resulted in the loss of life, environmental damage, and economic hardship for the region.



- It took 87 days to cap the leaking well.
- A variety of methods were used to contain and clean up the oil, including:
 - Mechanical recovery (using skimmers and booms)
 - Dispersants (chemicals that break down oil)
 - In-situ burning (controlled burning of oil on the water's surface)
- The long-term environmental impacts are still being studied.

Speaker Notes Capping the leaking well was a complex and challenging task. Several containment domes were deployed before a successful cap was placed in July 2010. The clean-up effort was massive, with crews working tirelessly to contain and remove the oil. However, the long-term effects of the spill continue to be felt by the Gulf ecosystem.



- New regulations have been implemented to improve safety in offshore drilling.
- The industry is investing in new technologies to prevent blowouts.
- Increased public scrutiny and pressure on companies to prioritize safety.



Speaker Notes In the wake of the Deepwater Horizon disaster, significant changes were made to improve safety standards in offshore drilling. The federal government implemented stricter regulations, and the industry adopted new technologies and procedures. There is also a greater emphasis on a culture of safety within drilling companies. While these efforts can help prevent future disasters, continued vigilance is essential.

- The frequency of large oil spills has decreased in recent decades.
- However, smaller spills are still a common occurrence.
- The risk of oil spills remains a concern, especially as drilling moves into more remote and challenging environments.



Speaker Notes While large oil spills like Deepwater Horizon are less common today, smaller spills continue to happen. There is a need for continued efforts to improve safety regulations, invest in new technologies, and prioritize environmental protection in the oil and gas industry.

OpenAI.com



ChatGPT 3.5 (free)
ChatGPT 4 \$
DALL-E 3 \$(image)

Alphabet.com
Owns Google



Free Google Bard
Gemini Plus \$

Microsoft



Microsoft Bing
Bing Image Creator
Bing CoPilot



Pro Version \$

PowerPoints:

SlidesGo
SlidesAI
Simplified

Text to Video:

Midjourney
Synthesia
VideoGen
Sora released soon

Lesson plans:

Diffit for Teachers
Curipod
ClassPoint
Eduaide.Ai

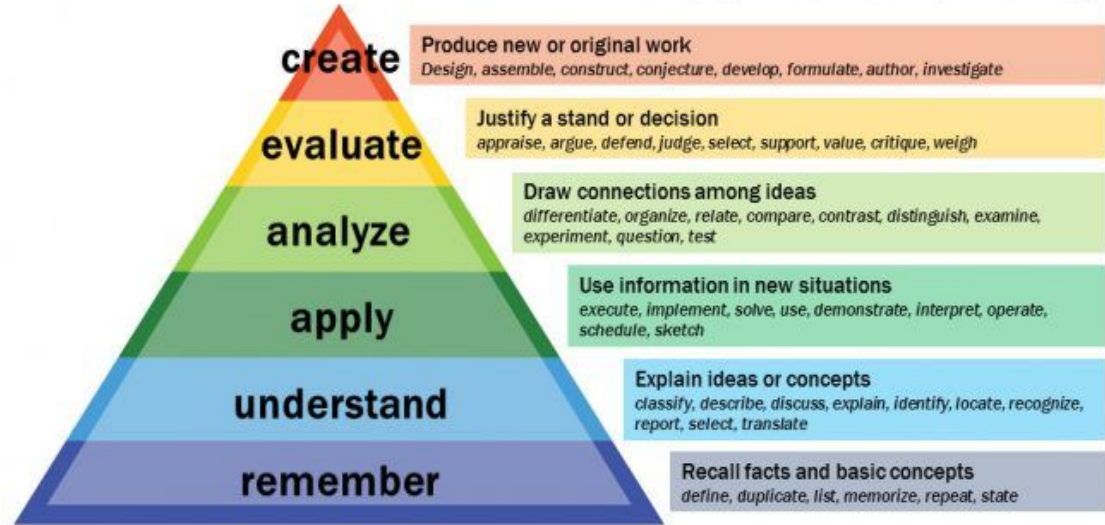
Step 1: Select an existing assignment

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- A paper
- A homework assignment

Have one in mind? Great!

Bloom's Taxonomy



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- 4. Evaluate Suggestions:** Evaluate the suggestions provided by AI and consider how each verb aligns with your goal of targeting higher-level thinking in the adapted activity.

Step 4: Transform the task

Rewrite the question or activity to incorporate higher-level Bloom's verbs.

Refine Instructions: Based on the suggestions provided by AI, refine the instructions to incorporate the selected higher-level Bloom's Taxonomy verbs. Ensure that the language used is clear, concise, and conducive to promoting higher-level thinking. Consider the following approaches:

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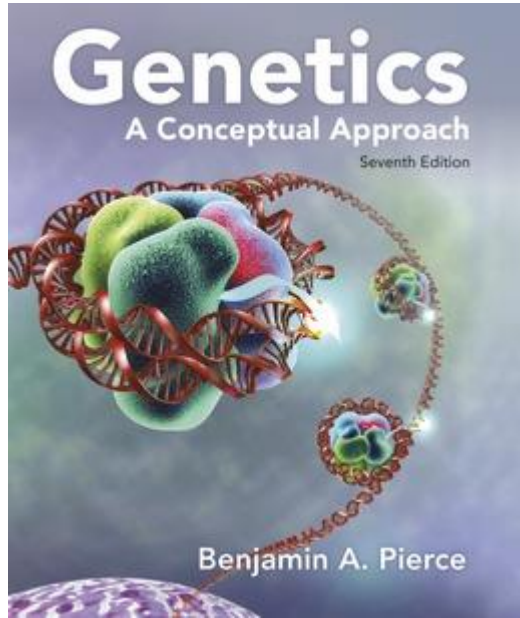
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Foster Growth Mindset: Encourage a growth mindset by highlighting the value of perseverance and effort. Reinforce the idea that challenges are opportunities for learning and improvement and provide positive reinforcement for their efforts and progress.

II. Crosses with Fruit Flies - Chi-Square analysis



apterous sepia (ap se)

Wild-type male:
smaller than the female,
rounded abdomen, black
spot



Wild-type female:
larger than the male, pointed
abdomen, no black spot

+ Wild type red
+ Wild type wings

Two male mutants
with no wings and dark eyes



DIHYBRID CROSS: Cross red eyed-normal wing heterozygote
with another red eyed-normal wing heterozygote

$$+/se, +/ap \times +/se, +/ap$$

Punnett square with 16 squares

Expected ratios from cross

9 red eye, normal wings

3 red eye, apterous

3 sepia eye, normal wing

1 sepia eye, apterous

(double mutant)

Expected Phenotypic ratio of 9:3:3:1

Students put flies 'to sleep' and count fly phenotypes under dissection microscope

362 red eye, normal wings (9)

164 red eye, apterous (3)

149 sepia eye, normal wing (3)

41 sepia eye, apterous (1)

S

You

dihybrid cross. The observed ratio is 348:119:129:41. The expected ratio is 9:3:3:1.
What is the Chi-Square? Would we accept or reject null hypothesis?

Resulting Chi-Square analysis- reject null hypothesis :-)

Now, let's calculate the chi-square value:

$$\chi^2 = \left(\frac{(348 - 318.5)^2}{318.5} \right) + \left(\frac{(119 - 106)^2}{106} \right) + \left(\frac{(129 - 106)^2}{106} \right) + \left(\frac{(41 - 32)^2}{32} \right)$$

$$\chi^2 = \left(\frac{29.5^2}{318.5} \right) + \left(\frac{13^2}{106} \right) + \left(\frac{23^2}{106} \right) + \left(\frac{9^2}{32} \right)$$

$$\chi^2 = \left(\frac{870.25}{318.5} \right) + \left(\frac{169}{106} \right) + \left(\frac{529}{106} \right) + \left(\frac{81}{32} \right)$$

$$\chi^2 \approx 2.735 + 1.598 + 4.988 + 2.531$$

$$\chi^2 \approx 11.852$$

Now, let's compare this calculated chi-square value to the critical value from the chi-square distribution table for 3 degrees of freedom and a significance level (α) of 0.05.

The critical value from the table is approximately 7.815.

Since the calculated chi-square value (11.852) exceeds the critical value (7.815), we reject the null hypothesis. This indicates that there is a significant difference between the observed and expected ratios in the dihybrid cross.



AI Amplified Learning

College Success, Education

Kimberly Koledoye

Sarah Althohami

Step 1: Select an existing assignment

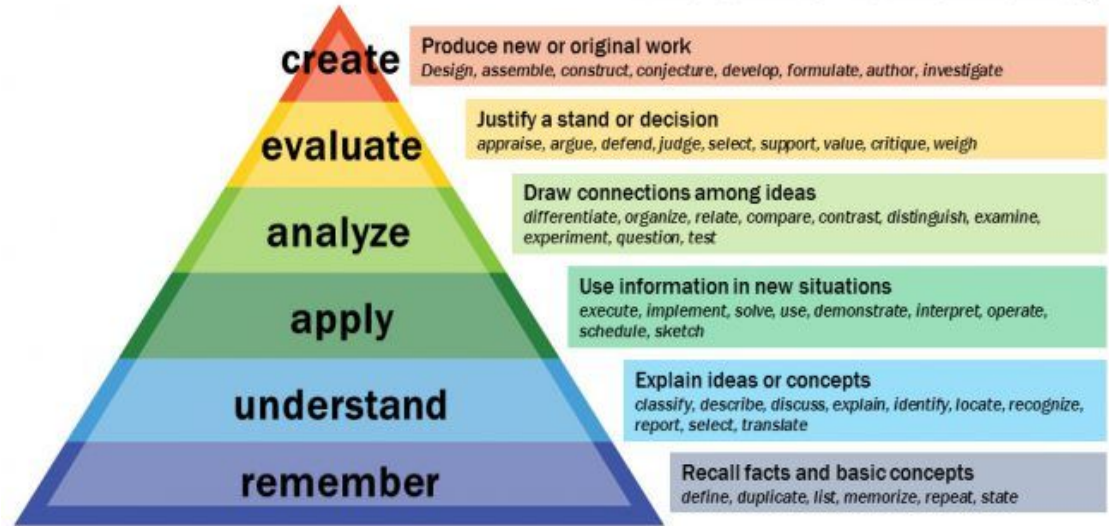
PEER CONSULTANT: [Create a targeted resume.](#)

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Have one in mind? Great!

Bloom's Taxonomy



Step 2: Analyze the task

Use AI to dissect the components of a lower-level activity or question. Through dialogue with AI, analyze these components to identify associated cognitive skills, which will inform the adaptation of the task to a higher level.

To create your prompt:

1. **Provide Context:** Start by explaining the activity or question you want AI to analyze. For instance, "I need assistance with a task where students define and explain [concept or topic]. Can you help identify the skills involved?"
2. **Clarify the Task:** Clearly outline the task. For example, "Students are tasked with defining [concept or topic] and explaining the process in simple terms."
3. **Describe Components:** Break down the task components, for example, "Can you help me break down its components to see what skills are involved?"
4. **Ask for Analysis:** Prompt AI to analyze these components: "Could you break down each component and discuss the cognitive skills required for students to achieve them?"
5. **Engage in Dialogue:** Interact with AI as it analyzes each component. Pose follow-up queries to deepen the analysis.

Step 3: Identify higher level Bloom's Verbs

Look for higher-level Bloom's verbs for applying or analyzing the concept. For applying, verbs like "demonstrate," "apply," "illustrate," or "use" are appropriate. For analyzing, verbs like "analyze," "evaluate," "synthesize," or "compare" are good fits.

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- 2. Specify the Goal :** Clearly state your goal of incorporating higher-level Bloom's Taxonomy verbs into the adapted activity. For example: "I want to encourage students to apply or analyze [concept or topic] rather than just recalling and understanding it."
- 3. Request Suggestions:** Prompt AI to suggest appropriate Bloom's Taxonomy verbs that align with your goal. You can say something like: "Could you suggest verbs that would prompt students to apply or analyze [concept or topic] in a higher-level activity?"
- 4. Evaluate Suggestions:** Evaluate the suggestions provided by AI and consider how each verb aligns with your goal of targeting higher-level thinking in the adapted activity.

Step 4: Transform the task

Rewrite the question or activity to incorporate higher-level Bloom's verbs.

Refine Instructions: Based on the suggestions provided by AI, refine the instructions to incorporate the selected higher-level Bloom's Taxonomy verbs. Ensure that the language used is clear, concise, and conducive to promoting higher-level thinking. Consider the following approaches:

- 1. Provide Contextualization:** Prompt AI with the concept or topic you're teaching and ask for real-world scenarios or examples that demonstrate its relevance. For example, "Can you share real-world examples to demonstrate the practical relevance of [concept or topic]? This aids student understanding."
- 2. Incorporate Multifaceted Approaches:** Ask AI for suggestions on how to diversify the assignment to encourage students to approach it from multiple perspectives or through various modes of inquiry. For instance, "How can I design this assignment to encourage students to analyze data, conduct research, engage in debates, or create multimedia presentations?"
- 3. Require Justification or Explanation:** Prompt AI to suggest ways to incorporate justification or explanation requirements into your assignment instructions. You might ask, "How can I modify the assignment instructions to prompt students to justify their responses or explain their reasoning?"
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Step 5: Assess the new task

Plan assessment for the higher-level task. Consider criteria like critical thinking, depth of analysis, evidence use, and argument coherence. Use AI feedback to refine rubrics, ensuring clarity, specificity, and alignment with learning outcomes. Adjust as needed to support higher-level thinking.

- 1. Align to Learning Outcomes:** Ensure that the refined activity aligns with your course's learning outcomes or objectives related to higher-level thinking skills. Clearly communicate to students how the activity contributes to their overall learning goals. "Can you help ensure my activity aligns with higher-level thinking objectives? Also, how can I clearly communicate its importance to students' overall learning goals?"
- 2. Discuss Criteria and Levels of Performance:** Engage in a dialogue with AI to discuss the criteria for assessment. Prompt to AI: "Can you provide insights on the criteria for assessment and the levels of performance within each criterion for evaluating students' performance at a higher-order Bloom's level? Specifically, what distinguishes excellent, proficient, basic, and inadequate performance?"
- 3. Create or Refine Rubrics/Criteria:** Based on the AI feedback, develop clear criteria or rubrics for assessing students' performance on the refined activity. Clearly outline expectations for higher-level thinking skills such as analysis, synthesis, and evaluation, and provide examples of exemplary responses.

Step 6: Feedback and Reflection

After students complete the new task, provide feedback that helps them understand the strengths and areas for improvement in their application or analysis of the concept. Encourage reflection on their thinking processes and strategies used.

Prompt: "After students complete the adapted task, what type of feedback would be most helpful in guiding their understanding of the concept and their higher-level thinking skills?" Consider the following ideas:

Clarification and Explanation: Clarify any misconceptions and explain key concepts clearly to enhance understanding.

Highlight Strengths and Address Weaknesses: Recognize strengths in higher-level thinking skills and provide specific examples. Address areas for improvement with constructive feedback and actionable suggestions. Offer specific suggestions for enhancing critical thinking, problem-solving, or analytical skills, focusing on actionable steps for improvement.

Encourage Reflection: Prompt students to reflect on their approach to the task. Encourage metacognition with questions like: 'How did you tackle the problem? What strategies were effective? How could you approach it differently next time?'

Promote Self-Assessment: Encourage students to self-assess their performance against the criteria and standards set for the task. Provide tools or checklists for self-assessment and encourage students to reflect on their strengths and areas for improvement.

Foster Growth Mindset: Encourage a growth mindset by highlighting the value of perseverance and effort. Reinforce the idea that challenges are opportunities for learning and improvement and provide positive reinforcement for their efforts and progress.

Alter a current assignment with AI

[Create a Targeted Resume](#)

[Create a Targeted Resume with AI](#)

Consider using AI to create a rubric

AI Amplified Learning

Communication, Foreign Languages

Matthew Bruce Ingram

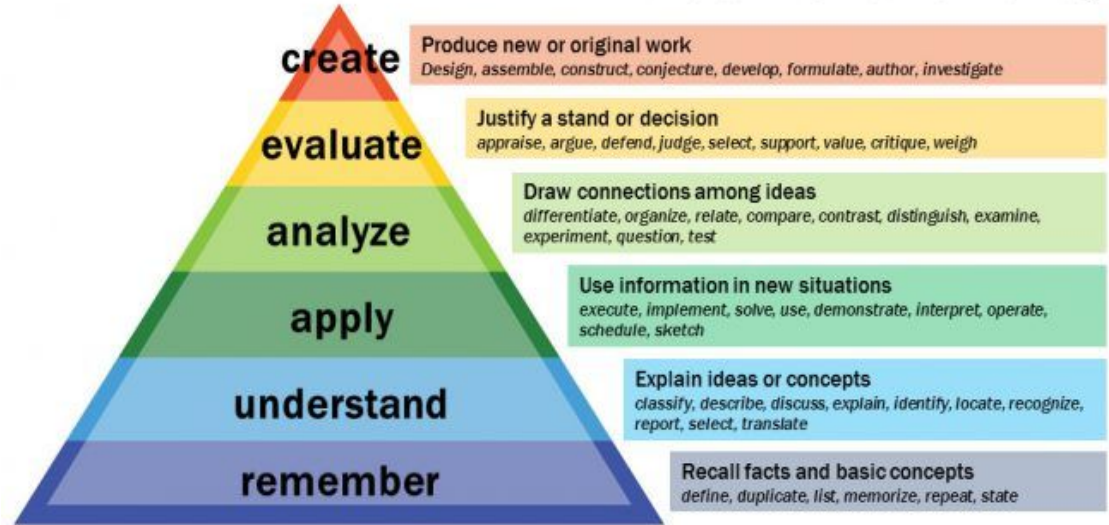
Christina Lembo

Step 1: Select an existing assignment/activity

By the end of this session, participants will be able to leverage AI tools within a structured framework to enhance an existing communication assignment, incorporating higher-level cognitive skills.

Utilizing Bloom's Taxonomy and AI analysis, participants will refine their chosen assignments—be it informative speeches, persuasive presentations, or other communication activities—to deepen student engagement and cognitive development.

Bloom's Taxonomy



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AI Amplified Learning

Economics

Ryan Herzog

Lisa Erdely

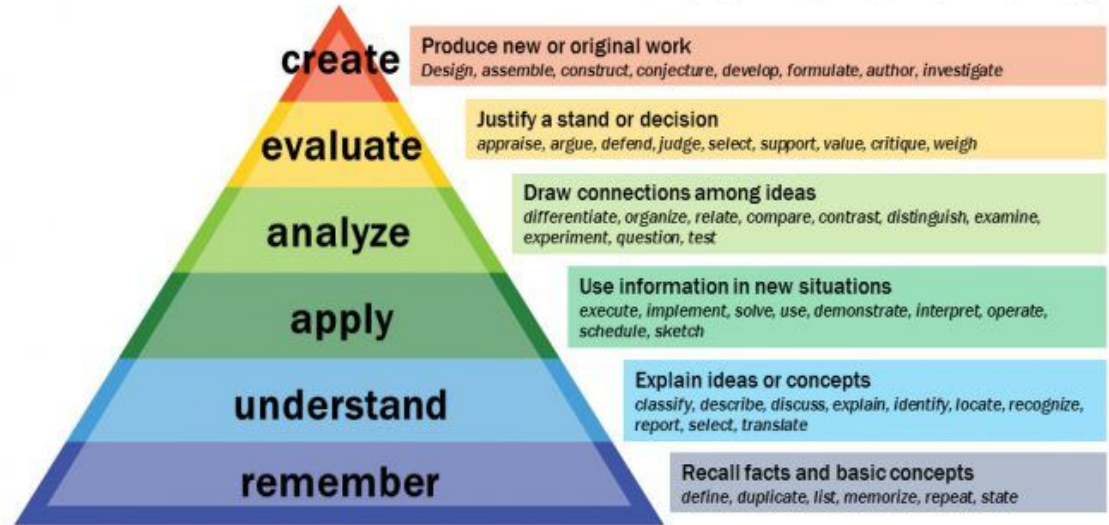
Step 1: Select an existing assignment

We are going to use AI tools (ChatGPT and Question Maker) to develop a quiz custom to course specific learning outcomes that utilizes Bloom's Taxonomy.

Here is what we need:

1. Content specific learning outcomes
2. Course notes or slides
3. Types of questions

Bloom's Taxonomy



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Did your prompt give you any results that were exciting or surprising? If so, what was it?



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AI Amplified Learning

English

Jennifer Duncan, Associate Professor, English
(Georgia State University, Perimeter College)

Vivian Garcia, English Marketing Manager

Joy Fisher Williams, English Marketing Manager

Melissa O'Brien, Client Relationship Specialist

**Meet your
Peer
Consultant!**



**Jennifer Duncan, Associate Professor, English
Georgia State University, Perimeter College**



My Pedagogical Principles

- Transparency
- Equity
- Critical Thinking & Reflection
- Scaffolded Learning
- Relevant Assignments

Transparency



The Class Policy



Clarity in Assignment
Instructions



Disclosure Statements

How did you arrive at your current AI policy?

- a) It was provided by my institution.
- b) It was developed by my department.
- c) I developed it myself.
- d) I don't have one.



What do you want from your syllabus policy?

- What college policies are already in place? How will you refine those for your course?
- What level of AI usage will you allow? How will you define it?
- What is not allowed? What are the consequences?
- How does the policy support student learning?

[Stanford Teaching Commons Creating Your Course Policy on AI](#)



Types of Policies - may differ based on the assignment

- Yes, always allowed
- Yes, but...
- No, but...
- No, never allowed

Include Your Rationale!

Transparency in Instructions

Specify why, when, and how students can use an AI in each step of the assignment.

- What is the goal of the overall assignment?
- Where do students get stuck?
- Can the AI help them move forward without compromising their own writing?



Transparency in Responses - give clear instructions for how they'll disclose AI usage

The screenshot shows a user interface for a submission system. At the top right, there is a dark blue header with a question mark icon and a calendar icon next to the text "Final Paper Due: Sun, Jul 9". Below this is a navigation bar with "SUBMISSIONS" and "REPORTS" tabs. A table with three rows is visible, each with a plus sign icon and a section name: "Introduction", "Logical Appeals", and "Thesis". Below the table is a section titled "Writer Instructions" containing a paragraph of text and a large grey arrow pointing downwards. Below that is a section titled "Writing Reflection Questions" with a bulleted list of four items. The text in the "Writer Instructions" section is partially obscured by the arrow and the text "Using the feedback you received from peer reviewers and me--as we... your own continued thinking about the assignment and the position you... -revise your essay. Keep the assignment prompt in mind, and remember to read through the rubric. For your MLA-style formatting and works cited page... Documenting Sources: MLA Style in Writer's Help." The text in the "Writing Reflection Questions" section is: "• **Agree/Disagree Poll** I know the criteria that will be used for giving feedback. • **Free Response** One piece of evidence I want to call attention to in my essay is... • **Free Response** One thing I want my reader to understand is... • **Free Response** The primary argument I'm making is... • **Free Response** How did you use AI in developing this final draft? Remember that you must disclose AI usage. You should also submit any AI generated material as the last page of your essay; label it as AI WRITING HELP."

?

Final Paper Due: Sun, Jul 9

PT SUBMISSIONS REPORTS

+ Introduction
+ Logical Appeals
+ Thesis

Writer Instructions

Using the feedback you received from peer reviewers and me--as we... your own continued thinking about the assignment and the position you... -revise your essay. Keep the assignment prompt in mind, and remember to read through the rubric. For your MLA-style formatting and works cited page... Documenting Sources: MLA Style in Writer's Help.

At this point, you may NOT use AI in your essay.

Writing Reflection Questions

- **Agree/Disagree Poll** I know the criteria that will be used for giving feedback.
- **Free Response** One piece of evidence I want to call attention to in my essay is...
- **Free Response** One thing I want my reader to understand is...
- **Free Response** The primary argument I'm making is...
- **Free Response** How did you use AI in developing this final draft? Remember that you must disclose AI usage. You should also submit any AI generated material as the last page of your essay; label it as AI WRITING HELP.

Erika Martinez: “Guidelines for Generative AI Use”

https://go.macmillanlearning.com/rs/122-CFG-317/images/Generative%20AI%20Guidelines.pdf?mkt_tok=MTIyLUNGRy0zMTcAAAGOc7WXC1pnJ2vhF51U65kS3dLmjd3qoKj_0sfd3Sz4h1AM3zg8Sm_KLgETsaC9rhZbhM2ddK_1S8uF7SVM5xawtcSBxiClR7piZkm2OEU9abSzTZ

Ryan Watkins: “From AI to A+”

https://medium.com/@rwatkins_7167/from-ai-to-a-prepare-your-students-for-using-chatgpt-and-other-ai-6ecfb14297b



How am I using AI in my courses?

To bridge learning gaps...

AI HELP

No, anecdotes and vivid language are not the same, although they can be related and used together in writing to enhance the overall impact of a piece. Here's the difference between the two:

1. **Anecdotes**:

- Anecdotes are short, specific, and often personal stories or examples that writers use to illustrate a point, provide context, or make their writing more relatable.
- They can be used to add a human element to an argument, making it more persuasive or engaging.
- Anecdotes are particularly useful for connecting with the reader on an emotional or experiential level.

2. **Vivid Language**:

- Vivid language refers to the use of descriptive and evocative words and phrases that create vivid mental images and engage the reader's senses.
- It aims to make the writing more colorful, descriptive, and immersive.

Vivid language can be used to paint a detailed picture, convey emotions, or set a

8



General Comment



Highlighted Writing

AI HELP No, anecdotes and vivid language are not the same, although they can be...

[Show More](#)

Reviewer Feedback

Nice Job

This was a very good way to use the AI to help you understand the differences between these two things!

To brainstorm and enter the conversation

As you've probably figured out by the topics for essay 1, you'll be writing about food based issues with essay 2 and 3 as well. For essay 2, you should develop an argument based on the ideas that interested you in the essays you were assigned to read.

Here are some suggestions to get you started:

- Develop an argument about the relationship between food and a specific culture.
- Explain how restaurants define a neighborhood (use specifics).
- Choose a food topic that is considered taboo and explain why it should be discussed.
- Explain how food is part of a specific religion or how a religion affected food.
- What role does commerce have in pushing certain foods on us?
- These are just some ideas. Your choice is up to, so take a look at the essays I've provided and use them as inspiration.



How did AI affect your development of this topic? Post the topics exactly as AI suggested them to you, and explain how you came up with the one you finally drafted.

ChatGPT

Certainly! Here are three prompts to explore the intricate relationship between food and culture:

Cultural Significance of Food: Delve into the ways in which food serves as a reflection of culture. How do the ingredients, preparation methods, and rituals associated with a particular cuisine reveal insights into the values, beliefs, and history of a culture? Provide specific examples from different cultures to illustrate your points.

Food's Role in Celebrations and Traditions: Investigate how food plays a central role in cultural celebrations and traditions. Explore how specific dishes or meals are tied to festivals, ceremonies, and special occasions. Discuss the symbolic meanings behind these foods and their importance in preserving cultural heritage.

Cultural Fusion in Food: Examine the phenomenon of cultural fusion in culinary practices. How do cultures influence and inspire one another in the realm of food? Discuss the emergence of fusion cuisines, the blending of flavors and techniques, and the impact of globalization on the diversity of food choices. Share examples of successful cultural fusion in the culinary world.

I merged the idea of the first prompt with one of the ones provided in the discussion. . . " Explain how restaurants define a neighborhood"

What thesis statements did AI generate for you? What did you like and not like about each one?

I didn't use AI for this step.



To see samples of what they're expected to do AND to evaluate those samples

I know the criteria that will be used for giving me feedback.
Strongly Agree

Paste the text of the AI generated thesis statement. Now, explain why this is or is not an evaluative thesis.
In "We Shall Not Be Moved" by Jessica B. Harris, the author employs a compelling combination of historical allusions, emotional resonance, and vivid imagery to craft a rhetorically intricate narrative that celebrates the unwavering resilience and collective strength of marginalized communities throughout history, thereby effectively reinforcing the power of solidarity in the face of adversity.

Do you agree with what the AI says about the effectiveness of the essay? Why or why not?
Yes. I enjoyed the essay and I feel like I did resonate with the allusions, emotions and images the AI thesis references.

What hallucinations can you spot in this thesis statement? In other words, what parts of this thesis are made up and can't be proven by the text.
In theory, the points all are a bit made up. They are all so vague to me, and a bit too general to be able to effectively defend in a paper.

What rhetorical elements does the AI think are the most important in this essay? Do you agree with these OR what would I like to replace them with?
"Historical allusions, emotional resonance, and vivid imagery." I agree with them in theory, as they are not wrong. And I would probably choose a similar rhetorical device as "emotional resonance"; and I might even steal vivid imagery. But overall, I think I would choose different points to hit for this paper.

Hide Side Panel 

Writer Instructions

DRAFT 1: This is NOT a draft! It's a step in the process!

For this step, you'll be developing your thesis and sentence outline for essay 1. Here's what you need to do:

1. Select one of the essays from iCollege that you're allowed to use for this assignment. Read the essay and take it apart to see how the author develops his or her argument.
2. Ask Chat GPT (or the LLM of your choice) to write a thesis statement for you for this essay. Copy and paste that into your document so I can see what it created; then, evaluate whether or not the thesis statement works by answering the following questions:
 - a. How is this thesis evaluating the essay?
 - b. Do I agree with what the AI says about the effectiveness of the essay? Why or why not?
 - c. What hallucinations can I spot in

JD

Jessica Harris's essay "We Shall Not Be Moved" uses lots of great examples and her personal stories and really helps readers understand why Civil Rights and food were connected.



Thank you for sharing your thesis statement. Let's analyze it and work on improving it.



Your thesis statement should provide a clear and concise overview of the main argument or point you intend to make in your essay. Based on your statement, here's some feedback and recommendations for improvement:

1. **Clarity and Specificity:** Your thesis statement needs to be more specific and clear. It mentions Jessica Harris's essay, but it doesn't specify the main argument or the specific rhetorical elements you plan to analyze.
2. **Rhetorical Analysis Focus:** In a rhetorical analysis essay, it's essential to mention the rhetorical strategies or devices the author uses to convey their message effectively. Consider mentioning specific rhetorical elements like ethos, pathos, logos, tone, imagery, or figurative language that Jessica Harris employs in her essay.
3. **Argument Precision:** Your thesis should clearly state your argument or interpretation of how the author uses rhetoric to convey their message. What is the main point you're trying to make about the connection between Civil Rights and food in Jessica Harris's essay?

Here's a revised thesis statement that incorporates these recommendations:

 Regenerate

To evaluate their own work and reflect on the experience of using AI.

To think critically about what the AI produces/ "question authority"

Content and settings within this course have been restricted and can only be changed from within the Section Manager.

Review Ready Submissions



Viewed by Student

Reflection

I know the criteria that will be used for giving me feedback.
Strongly Agree

Paste the text of the AI generated thesis statement. Now, explain how is this thesis evaluating the essay?

In "We Shall Not Be Moved" by Jessica B. Harris, the author employs rhetorical strategies such as vivid imagery, historical allusions, and personal anecdotes to evoke a powerful sense of resilience and collective identity among African Americans, compelling readers to reflect on the enduring spirit of the community in the face of systemic oppression and injustice.

Do I agree with what the AI says about the effectiveness of the essay? Why or why not?

I don't believe the essay was effective in mentioning exactly how the Civil Rights Movement impacted the evolution of the African American diet.

What hallucinations can I spot in this thesis statement? In other words, what parts of this thesis are made up and can't be proven by the text.

The thesis highlights the "resilience" of African Americans which is not what the essay is about. The essay emphasizes the evolution of the African American diet.

What rhetorical elements does the AI think are the most important in this essay? Do I agree with these OR what would I like to replace them with?

The AI thinks the historical allusions, personal anecdotes, and vivid imagery is the most important essay. I agree that the essay employs historical and vivid imagery, yet I would replace the personal anecdote with the fact the author fails to focus on the central topic.



Hide Side Panel

collapse

Writer Instructions

DRAFT 1: This is NOT a draft! It's a step in the process!

For this step, you'll be developing your thesis and sentence outline for essay 1. Here's what you need to do:

1. Select one of the essays from iCollege that you're allowed to use for this assignment. Read the essay and take it apart to see how the author develops his or her argument.
2. Ask Chat GPT (or the LLM of your choice) to write a thesis statement for you for this essay. Copy and paste that into your document so I can see what it created; then, evaluate whether or not the thesis statement works by answering the following questions:
 - a. How is this thesis evaluating the essay?
 - b. Do I agree with what the AI says about the effectiveness of the essay? Why or why not?
 - c. What hallucinations can I spot in

When asked about the role of women in Gilgamesh, Chat GPT gives [this response](#). Your job in this assignment is to prove Chat GPT wrong - or at least biased. For each of the characters listed, give a revised interpretation for how these women and their interactions show that women in this story are actually being rewritten as minor characters in what was once a matriarchal society. Unlike Chat GPT, you'll need to use specific examples from the text to support your claims. You may also use the following 2 articles to prove your point. *(This assignment will work well for students who like argument and debate and who feel comfortable exploring new technologies.)*

- [Hodges, Kate, *Warriors, Witches, Women: Mythology's Fiercest Females*, White Lion, 2020, pp 203-207.](#)
- [Sonik, Karen, "Rethinking Women as Minor Characters in the Epic of Gilgamesh," *Journal of the American Oriental Society*, vol. 141, issue, 4, 01 October 2021, pp. 779-802.](#)
- For this essay, you may not use Chat GPT other than the response I gave you. Remember that your job is to argue against the AI! Failure to disclose LLM usage will result in a 0 for the assignment.

Initial Findings

- Students aren't cheating more.
- Students are more willing to try new things - along with me.
- Students are apprehensive about using AI for different reasons.
- Honest conversations fix most AI classroom issues.



“I’ve learned that I need to be better at giving myself time to free write before writing the actual assignment. I did learn how to use AI to guide me with assignments and how not to plagiarize with it.”

“Honestly, my journey has not only developed my language and writing abilities but has also fostered personal growth, encouraging self-reflection and a deeper understanding of my capabilities and aspirations in the realm of being creative in my writing abilities.”

“Exploring different topics in this class revealed areas of personal interest or passion I didn't know I had. One thing I learned while in this class is that English Composition II often acts as a gateway to understanding one's capabilities in writing and critical thinking, and it can provide valuable insights into personal strengths, interests, and areas for growth.”

“I learned how to use ai as a tool and not as a crutch.”



Strategy 1:

Teach students to use AI as a study tool.

Example: Use Chat GPT to create a research plan.

How could your students
use AI as a study tool?





Strategy 2:

Integrate AI into a current writing assignment.

Example: Use ChatGPT as part of an Annotated Bibliography

Content and settings within this course have been restricted and can only be changed from within the Section Manager.

PROMPT SUBMISSIONS REPORTS

Draft Source Check Settings

2 Source Check(s) allowed during drafting

1 Source Check at draft submission

Draft 2 Instructions: Annotated Bibliography

Gather 5-7 sources that you think you might use to support your argument in essay 3. For each source, write an MLA-style citation and an annotation. I'm going to tell you exactly what each annotation must contain, so please follow my instructions.

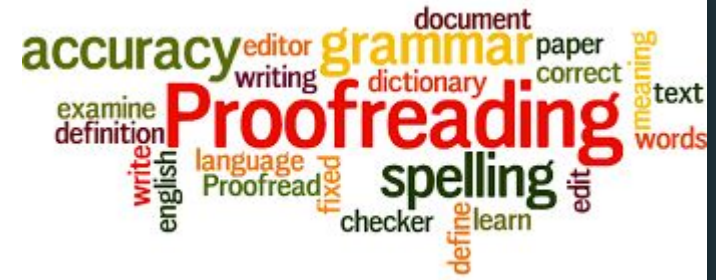
Each annotation will contain at least 5 sentences:

1. Summarize the source in 2-4 sentences. **You may use AI for this, but make sure the summary is accurate.** When you summarize, you briefly state the main idea and key details of a source and give the context and audience for the source.
2. Evaluate the source in 2-4 sentence. The evaluation must explain the source's authority, bias, currency, and relevance or usefulness toward your research question. To write these 2-4 sentences, you might ask questions such as these:
 - What are the author's qualifications? Do I trust this author's findings? Why or why not?
 - How will this source be useful to me in answering my research question?
 - Is this data recent enough for my purposes? Is this author's bias too strong?
 - Does the author leave too many unanswered questions?
 - Does the source present a surprising counterargument?
3. In 1-2 sentences, explain how this source connects to at least one other specific source in your annotated bibliography. **YOU MAY NOT USE AI FOR THIS. AI DOESN'T KNOW YOUR OTHER SOURCES.**

Keep in mind that sources can play a variety of roles in helping you to answer a research question. Not all sources have to directly support a thesis. Vary your sources with those that provide data, definitions, background information, or

Do you have a writing assignment that currently requires students to use AI?





Strategy 3:

Use AI as an evaluation tool.

Examples: Use AI as a grammar checker or to evaluate writing

Students: Use AI as a grammar checker

Sample Prompt: You are a copy editor. You are tasked with improving the punctuation and grammar of the follow writing sample with nominal changes in wording. When you make corrections, also provide a full list of the changes you have made to the essay.

Students and Instructors: Use AI to evaluate writing

Sample Prompt: You are evaluating a college level essay on x. First, ask me for the essay; then, I'd like for you to offer three specific ways the essay can be improved. Ground your advice in current composition theory and focus on evaluating _____. Ask me for the essay.



How do you use AI to offer feedback to students

OR

to encourage them to get feedback on their own work?



AI Resources

[AI for Education Prompt Library](#) – Prompts to help with lesson plans and administrative tasks

MLA-CCC Joint Task Force on AI and Writing, [“Exploring AI Pedagogy: A Community Collection of Teaching Reflections” Humanities Commons](#).(Check the Category: [Essay Writing Page](#)) – Discussions of AI in writing, Reflections on Writing Assignments, etc

Stanford University, [“Artificial Intelligence Teaching Guide”](#) – a self paced guide to making informed choices about using AI in your teaching including understanding AI, exploring its pedagogical uses, creating course policies, and integrating AI into assignments.

Vanderbilt University’s Coursera [“Prompt Engineering for ChatGPT.”](#) -Introduction to the basics of prompt writing (can be audited for free)

Watkins, Ryan, [“From AI to A+: Prepare Your Students for using ChatGPT and Other AI”](#) Medium. 27 July 2023. – [Tools you can use to help students understand when to use or not use AI](#)

Zehnder, Caralyn, et al, [Learning that Matters Resources including Cut and Paste prompts](#) (Look at [AI Prompts for Teaching \(Cynthia Alby\)](#))

AI Amplified Learning

History, Art History, Anthropology, Philosophy

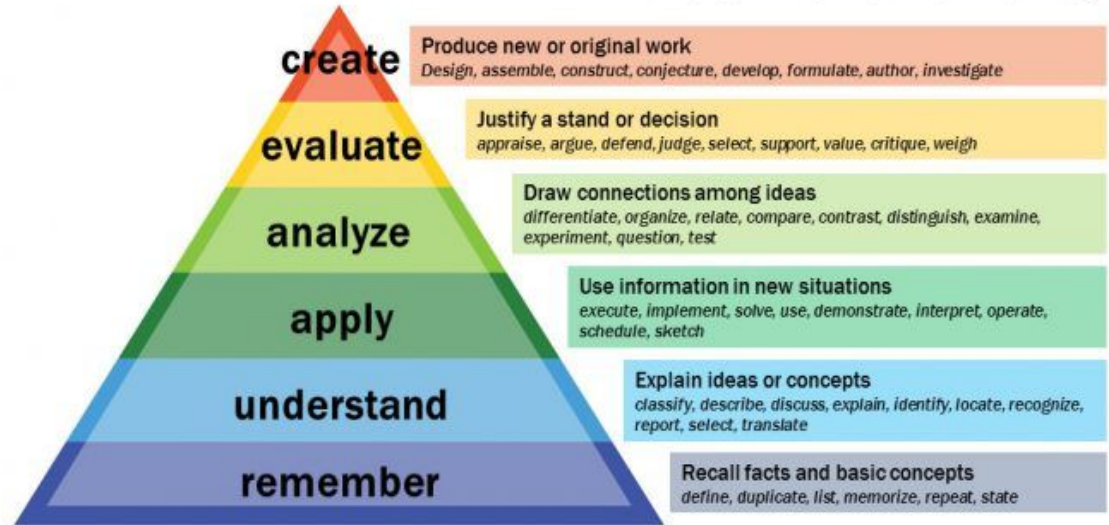
Vaughn Scribner

Bill Lombardo

Step 1: Select an existing assignment

Assignment: Define what a Primary Source is, and explain how and why historians analyze them.

Bloom's Taxonomy



Step 2: Analyze the task

Use AI to dissect the components of a lower-level activity or question. Through dialogue with AI, analyze these components to identify associated cognitive skills, which will inform the adaptation of the task to a higher level.

To create your prompt:

1. **Provide Context:** Start by explaining the activity or question you want AI to analyze. For instance, "I need assistance with a task where students define and explain how to analyze a primary source. Can you help identify the skills involved?"
2. **Clarify the Task:** Clearly outline the task. For example, "Students are tasked with analyzing a primary source and explaining the process in simple terms."
3. **Describe Components:** Break down the task components, for example, "Can you help me break down its components to see what skills are involved?"
4. **Ask for Analysis:** Prompt AI to analyze these components: "Could you break down each component and discuss the cognitive skills required for students to achieve them?"
5. **Engage in Dialogue:** Interact with AI as it analyzes each component. Pose follow-up queries to deepen the analysis.

Step 3: Identify higher level Bloom's Verbs

Look for higher-level Bloom's verbs for applying or analyzing the concept. For applying, verbs like "demonstrate," "apply," "illustrate," or "use" are appropriate. For analyzing, verbs like "analyze," "evaluate," "synthesize," or "compare" are good fits.

To create your prompt:

- 1. Provide Context:** Start by providing context about the lower-level activity you've analyzed. For example: "I have analyzed a task where students define and explain primary source analysis. Now, I want to adapt it to target higher-level thinking. Can you suggest appropriate Bloom's Taxonomy verbs for this?"
- 2. Specify the Goal :** Clearly state your goal of incorporating higher-level Bloom's Taxonomy verbs into the adapted activity. For example: "I want to encourage students to analyze a primary source rather than just identifying it."
- 3. Request Suggestions:** Prompt AI to suggest appropriate Bloom's Taxonomy verbs that align with your goal. You can say something like: "Could you suggest verbs that would prompt students to analyze a primary source in a higher-level activity?"
- 4. Evaluate Suggestions:** Evaluate the suggestions provided by AI and consider how each verb aligns with your goal of targeting higher-level thinking in the adapted activity.

Step 4: Transform the task

Rewrite the question or activity to incorporate higher-level Bloom's verbs.

Refine Instructions: Based on the suggestions provided by AI, refine the instructions to incorporate the selected higher-level Bloom's Taxonomy verbs. Ensure that the language used is clear, concise, and conducive to promoting higher-level thinking. Consider the following approaches:

- 1. Provide Contextualization:** Prompt AI with the concept or topic you're teaching and ask for real-world scenarios or examples that demonstrate its relevance. For example, "Can you share real-world examples to demonstrate the practical relevance of primary source analysis? This aids student understanding."
- 2. Incorporate Multifaceted Approaches:** Ask AI for suggestions on how to diversify the assignment to encourage students to approach it from multiple perspectives or through various modes of inquiry. For instance, "How can I design this assignment to encourage students to analyze data, conduct research, engage in debates, or create multimedia presentations?"
- 3. Require Justification or Explanation:** Prompt AI to suggest ways to incorporate justification or explanation requirements into your assignment instructions. You might ask, "How can I modify the assignment instructions to prompt students to justify their responses or explain their reasoning?"
- 4. Create Authentic Assessment Tasks:** Ask AI about designing assessment tasks that mirror real-world challenges or problems relevant to the concept. You can say, "I want to create assessment tasks that simulate real-world challenges related to primary source analysis. How can I design tasks that require students to apply their knowledge in meaningful contexts?"

Step 5: Assess the new task

Plan assessment for the higher-level task. Consider criteria like critical thinking, depth of analysis, evidence use, and argument coherence. Use AI feedback to refine rubrics, ensuring clarity, specificity, and alignment with learning outcomes. Adjust as needed to support higher-level thinking.

- 1. Align to Learning Outcomes:** Ensure that the refined activity aligns with your course's learning outcomes or objectives related to higher-level thinking skills. Clearly communicate to students how the activity contributes to their overall learning goals. "Can you help ensure my activity aligns with higher-level thinking objectives? Also, how can I clearly communicate its importance to students' overall learning goals?"
- 2. Discuss Criteria and Levels of Performance:** Engage in a dialogue with AI to discuss the criteria for assessment. Prompt to AI: "Can you provide insights on the criteria for assessment and the levels of performance within each criterion for evaluating students' performance at a higher-order Bloom's level? Specifically, what distinguishes excellent, proficient, basic, and inadequate performance?"
- 3. Create or Refine Rubrics/Criteria:** Based on the AI feedback, develop clear criteria or rubrics for assessing students' performance on the refined activity. Clearly outline expectations for higher-level thinking skills such as analysis, synthesis, and evaluation, and provide examples of exemplary responses.

Step 6: Feedback and Reflection

After students complete the new task, provide feedback that helps them understand the strengths and areas for improvement in their application or analysis of the concept. Encourage reflection on their thinking processes and strategies used.

Prompt: "After students complete the adapted task, what type of feedback would be most helpful in guiding their understanding of the concept and their higher-level thinking skills?" Consider the following ideas:

Clarification and Explanation: Clarify any misconceptions and explain key concepts clearly to enhance understanding.

Highlight Strengths and Address Weaknesses: Recognize strengths in higher-level thinking skills and provide specific examples. Address areas for improvement with constructive feedback and actionable suggestions. Offer specific suggestions for enhancing critical thinking, problem-solving, or analytical skills, focusing on actionable steps for improvement.

Encourage Reflection: Prompt students to reflect on their approach to the task. Encourage metacognition with questions like: 'How did you tackle the problem? What strategies were effective? How could you approach it differently next time?'

Promote Self-Assessment: Encourage students to self-assess their performance against the criteria and standards set for the task. Provide tools or checklists for self-assessment and encourage students to reflect on their strengths and areas for improvement.

Foster Growth Mindset: Encourage a growth mindset by highlighting the value of perseverance and effort. Reinforce the idea that challenges are opportunities for learning and improvement and provide positive reinforcement for their efforts and progress.

AI Amplified Learning

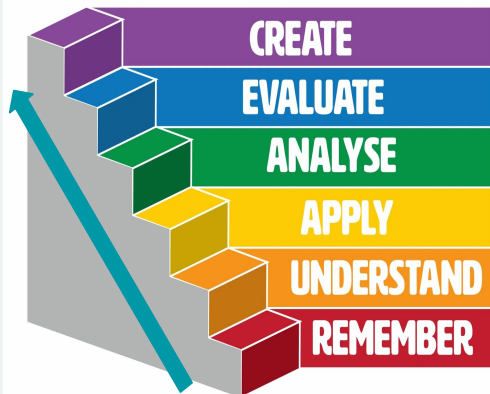
Math/Stats

Juli Moore

Lucinda Bingham

Adapt Your Own Resource Using AI!

BLOOM'S TAXONOMY



COPILOT



perplexity

Gemini



AI can be used by instructors to help create resources such as lesson plans, group activities, test questions, or quizzes.

Using helpful prompts is key to getting the kind of material you want.

LIVE DEMO! Let's decide as a group what we would like lecture on using ChatGPT.

In this exercise, we will address

- how we can leverage AI to help create lecture material.
- how to improve the prompts used to get better results from ChatGPT
- how to think outside the box to get ChatGPT to help us with our workload

What we will need in this lesson:

- Clear learning outcomes for students
- Material to support learning in those areas of focus
- Any specific methods or teaching tips
- Assessments to evaluate the effectiveness of my teaching



Your Turn



Do you have a task that you'd like AI to analyze?

Through dialogue with AI, you can analyze the components of an activity or question to identify associated cognitive skills. The analysis can help modify activity/question to a higher level.

To create your prompt:

1. **Provide Context:** Start by explaining the activity or question you want AI to analyze.

"I need assistance with a task where students define and explain [concept or topic]. Can you help identify the skills involved?"

2. **Clarify the Task:** Clearly outline the task.

"Students are tasked with defining [concept or topic] and explaining the process in simple terms."

3. **Determine the Components:** Break down the task components

"Can you help me break down its components to see what skills are involved?"

4. **Ask for Analysis:** Prompt AI to analyze these components:

"Could you break down each component and discuss the cognitive skills required for students to achieve them?"

5. **Engage in Dialogue:** Interact with AI as it analyzes each component. Ask follow-up questions to deepen the analysis.

Increasing the Bloom's level of the task

Does your task seem too simple or easy? Maybe you'd like to increase the task to a higher level, but you need some inspiration. Use these prompts to help you improve your activity.

To create your prompt:

1. **Provide Context:** Start by providing context about the lower-level activity you've analyzed.

"I have analyzed a task where students define and explain [concept or topic]. Now, I want to adapt it to target higher-level thinking. Can you suggest appropriate Bloom's Taxonomy verbs for this?"

2. **Specify the Goal :** Clearly state your goal of incorporating higher-level Bloom's Taxonomy verbs into the adapted activity.

"I want to encourage students to apply or analyze [concept or topic] rather than just recalling and understanding it."

3. **Request Suggestions:** Prompt AI to suggest appropriate Bloom's Taxonomy verbs that align with your goal.

"Could you suggest verbs that would prompt students to apply or analyze [concept or topic] in a higher-level activity?"

"Could you suggest ways to rephrase the question to prompt students to discover [concept or topic] at a higher-level?"

4. **Evaluate Suggestions:** Evaluate the suggestions provided by AI and consider how each verb aligns with your goal of targeting higher-level thinking in the adapted activity.

Use the suggestions to finalize the task

Based on the suggestions provided by AI, refine the instructions of the activity to incorporate the selected higher-level Bloom's Taxonomy verbs. Here are a few approaches to consider:

1. **Provide Contextualization:** Prompt AI with the concept or topic you're teaching and ask for real-world scenarios or examples that demonstrate its relevance.

"Can you share real-world examples to demonstrate the practical relevance of [concept or topic]?"

2. **Incorporate Multifaceted Approaches:** Ask AI for suggestions on how to diversify the assignment to encourage students to approach it from multiple perspectives or through various modes of inquiry.

"How can I design this assignment to encourage students to analyze data, conduct research, engage in debates, or create multimedia presentations?"

3. **Require Justification or Explanation:** Prompt AI to suggest ways to incorporate justification or explanation requirements into your assignment instructions.

"How can I modify the assignment instructions to ask students to justify their responses or explain their reasoning?"

4. **Create Authentic Assessment Tasks:** Ask AI about designing assessment tasks that mirror real-world challenges or problems relevant to the concept.

"I want to create assessment tasks that simulates real-world challenges related to [concept or topic]. How can I design tasks that require students to apply their knowledge of [concept or topic] in meaningful contexts?"

Use AI to assess your new task

Use AI feedback to refine rubrics, ensuring clarity, specificity, and alignment with learning outcomes. Adjust as needed to support higher-level thinking.

1. **Align to Learning Outcomes:** Ensure that the refined activity aligns with your learning outcomes or objectives related to higher-level thinking skills. Clearly communicate to students how the activity contributes to their overall learning goals.

"Can you help ensure my activity aligns with higher-level thinking objectives? Also, how can I clearly communicate its importance to students' overall learning goals?"

2. **Discuss Criteria and Levels of Performance:** Engage in a dialogue with AI to discuss the criteria for assessment.

"Can you provide insights on the criteria for assessment and the levels of performance within each criterion for evaluating students' performance at a higher-order Bloom's level? Specifically, what distinguishes excellent, proficient, basic, and inadequate performance?"

3. **Create or Refine Rubrics/Criteria:** Based on the AI feedback, develop clear criteria or rubrics for assessing students' performance on the refined activity. Clearly outline expectations for higher-level thinking skills such as analysis, synthesis, and evaluation, and provide examples of exemplary responses.

AI can help with suggesting feedback to give to students after the task is completed. Feedback is essential for the student to be able to improve in their application or analysis of the concept.

Consider asking AI:

"After students complete the adapted task, what type of feedback would be most helpful in guiding their understanding of the concept and their higher-level thinking skills?"

Ask AI for help with feedback and reflection

Use the following topics to help guide your dialog with AI to obtain good feedback for your task.

Clarification and Explanation: Clarify any misconceptions and explain key concepts clearly to enhance understanding.

Highlight Strengths and Address Weaknesses: Recognize strengths in higher-level thinking skills and provide specific examples. Address areas for improvement with constructive feedback and actionable suggestions. Offer specific suggestions for enhancing critical thinking, problem-solving, or analytical skills, focusing on actionable steps for improvement.

Encourage Reflection: Prompt students to reflect on their approach to the task. Encourage metacognition with questions like: 'How did you tackle the problem? What strategies were effective? How could you approach it differently next time?'

Promote Self-Assessment: Encourage students to self-assess their performance against the criteria and standards set for the task. Provide tools or checklists for self-assessment and encourage students to reflect on their strengths and areas for improvement.

Foster Growth Mindset: Encourage a growth mindset by highlighting the value of perseverance and effort. Reinforce the idea that challenges are opportunities for learning and improvement and provide positive reinforcement for their efforts and progress.

AI Amplified Learning

Physics, Astronomy, Geology, Geography, Environmental Science

Matt Evans

Liz Simmons

3



What happens when a hawk dives down to capture a fish?

- A: The fish exerts an equal force on the hawk. $\Omega \pi$ Just showing you can edit and enter symbols
- B: The hawk experiences no force during the dive.
- C: The water pushes on the fish with the same force.
- D: The fish does not exert a force on the hawk.
- E: The fish exerts an equal and opposite force on the hawk.

4



Which are examples of Newton's 3rd Law in action?

- A: A fish swimming by pushing water backward.
- B: A book lying on a table.
- C: The Earth's gravitational pull on the Moon.
- D: A magnet repelling another magnet.
- E: A balloon deflating as air rushes out.

5



A person sitting in a chair exerts a force on it. Identify the reaction force.

- A: The person's weight.
- B: The chair pushing up on the person.
- C: The ground pushing on the chair.
- D: The person pushing down on the ground.
- E: Gravity acting on the chair.



What happens when a hawk dives down to capture a fish?

- A: The fish exerts an equal force on the hawk. $\Omega \pi$ Just showing you can edit and enter symbols
- B: The hawk experiences no force during the dive.
- C: The water pushes on the fish with the same force.
- D: The fish does not exert a force on the hawk.
- E: The fish exerts an equal and opposite force on the hawk.

Step 1: Select an existing assignment or a topic for which you've struggled to generate materials.

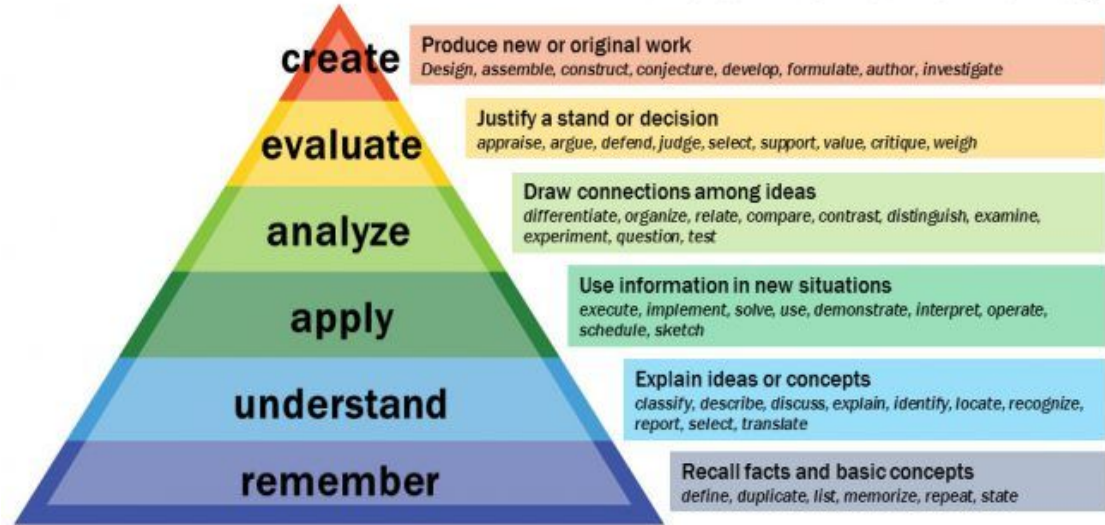
ANOTHER STARTING PLACE?

Identify an assessment that you use that is currently a lower Bloom's level. This could be:

- An in-class activity
- An exam question
- A paper
- A homework assignment

Have one in mind? Great!

Bloom's Taxonomy



Step 2: Analyze the task

Use AI to dissect the components of a lower-level activity or question. Through dialogue with AI, analyze these components to identify associated cognitive skills, which will inform the adaptation of the task to a higher level.

To create your prompt:

1. **Provide Context:** Start by explaining the activity or question you want AI to analyze. For instance, "I need assistance with a task where students define and explain [concept or topic]. Can you help identify the skills involved?"
2. **Clarify the Task:** Clearly outline the task. For example, "Students are tasked with defining [concept or topic] and explaining the process in simple terms."
3. **Describe Components:** Break down the task components, for example, "Can you help me break down its components to see what skills are involved?"
4. **Ask for Analysis:** Prompt AI to analyze these components: "Could you break down each component and discuss the cognitive skills required for students to achieve them?"
5. **Engage in Dialogue:** Interact with AI as it analyzes each component. Pose follow-up queries to deepen the analysis.

Step 3: Identify higher level Bloom's Verbs

Look for higher-level Bloom's verbs for applying or analyzing the concept. For applying, verbs like "demonstrate," "apply," "illustrate," or "use" are appropriate. For analyzing, verbs like "analyze," "evaluate," "synthesize," or "compare" are good fits.

To create your prompt:

- 1. Provide Context:** Start by providing context about the lower-level activity you've analyzed. For example: "I have analyzed a task where students define and explain [concept or topic]. Now, I want to adapt it to target higher-level thinking. Can you suggest appropriate Bloom's Taxonomy verbs for this?"
- 2. Specify the Goal :** Clearly state your goal of incorporating higher-level Bloom's Taxonomy verbs into the adapted activity. For example: "I want to encourage students to apply or analyze [concept or topic] rather than just recalling and understanding it."
- 3. Request Suggestions:** Prompt AI to suggest appropriate Bloom's Taxonomy verbs that align with your goal. You can say something like: "Could you suggest verbs that would prompt students to apply or analyze [concept or topic] in a higher-level activity?"
- 4. Evaluate Suggestions:** Evaluate the suggestions provided by AI and consider how each verb aligns with your goal of targeting higher-level thinking in the adapted activity.

Step 4: Transform the task

Rewrite the question or activity to incorporate higher-level Bloom's verbs.

Refine Instructions: Based on the suggestions provided by AI, refine the instructions to incorporate the selected higher-level Bloom's Taxonomy verbs. Ensure that the language used is clear, concise, and conducive to promoting higher-level thinking. Consider the following approaches:

- 1. Provide Contextualization:** Prompt AI with the concept or topic you're teaching and ask for real-world scenarios or examples that demonstrate its relevance. For example, "[Can you share real-world examples to demonstrate the practical relevance of \[concept or topic\]? This aids student understanding.](#)"
- 2. Incorporate Multifaceted Approaches:** Ask AI for suggestions on how to diversify the assignment to encourage students to approach it from multiple perspectives or through various modes of inquiry. For instance, "[How can I design this assignment to encourage students to analyze data, conduct research, engage in debates, or create multimedia presentations?](#)"
- 3. Require Justification or Explanation:** Prompt AI to suggest ways to incorporate justification or explanation requirements into your assignment instructions. You might ask, "[How can I modify the assignment instructions to prompt students to justify their responses or explain their reasoning?](#)"
- 4. Create Authentic Assessment Tasks:** Ask AI about designing assessment tasks that mirror real-world challenges or problems relevant to the concept. You can say, "[I want to create assessment tasks that simulate real-world challenges related to \[concept or topic\]. How can I design tasks that require students to apply their knowledge in meaningful contexts?](#)"

Step 5: Assess the new task

Plan assessment for the higher-level task. Consider criteria like critical thinking, depth of analysis, evidence use, and argument coherence. Use AI feedback to refine rubrics, ensuring clarity, specificity, and alignment with learning outcomes. Adjust as needed to support higher-level thinking.

- 1. Align to Learning Outcomes:** Ensure that the refined activity aligns with your course's learning outcomes or objectives related to higher-level thinking skills. Clearly communicate to students how the activity contributes to their overall learning goals. "Can you help ensure my activity aligns with higher-level thinking objectives? Also, how can I clearly communicate its importance to students' overall learning goals?"
- 2. Discuss Criteria and Levels of Performance:** Engage in a dialogue with AI to discuss the criteria for assessment. Prompt to AI: "Can you provide insights on the criteria for assessment and the levels of performance within each criterion for evaluating students' performance at a higher-order Bloom's level? Specifically, what distinguishes excellent, proficient, basic, and inadequate performance?"
- 3. Create or Refine Rubrics/Criteria:** Based on the AI feedback, develop clear criteria or rubrics for assessing students' performance on the refined activity. Clearly outline expectations for higher-level thinking skills such as analysis, synthesis, and evaluation, and provide examples of exemplary responses.

Step 6: Feedback and Reflection

After students complete the new task, provide feedback that helps them understand the strengths and areas for improvement in their application or analysis of the concept. Encourage reflection on their thinking processes and strategies used.

Prompt: "After students complete the adapted task, what type of feedback would be most helpful in guiding their understanding of the concept and their higher-level thinking skills?" Consider the following ideas:

Clarification and Explanation: Clarify any misconceptions and explain key concepts clearly to enhance understanding.

Highlight Strengths and Address Weaknesses: Recognize strengths in higher-level thinking skills and provide specific examples. Address areas for improvement with constructive feedback and actionable suggestions. Offer specific suggestions for enhancing critical thinking, problem-solving, or analytical skills, focusing on actionable steps for improvement.

Encourage Reflection: Prompt students to reflect on their approach to the task. Encourage metacognition with questions like: 'How did you tackle the problem? What strategies were effective? How could you approach it differently next time?'

Promote Self-Assessment: Encourage students to self-assess their performance against the criteria and standards set for the task. Provide tools or checklists for self-assessment and encourage students to reflect on their strengths and areas for improvement.

Foster Growth Mindset: Encourage a growth mindset by highlighting the value of perseverance and effort. Reinforce the idea that challenges are opportunities for learning and improvement and provide positive reinforcement for their efforts and progress.

AI Amplified Learning

Psychology

Éva Szeli, Teaching Professor in Psychology, Arizona State University
Dan DeBonis, Sr. Exec. Program Manager, Macmillan Learning

Step 1: Select an existing assignment

EXAMPLE:

What are the social psychological principles of persuasion?

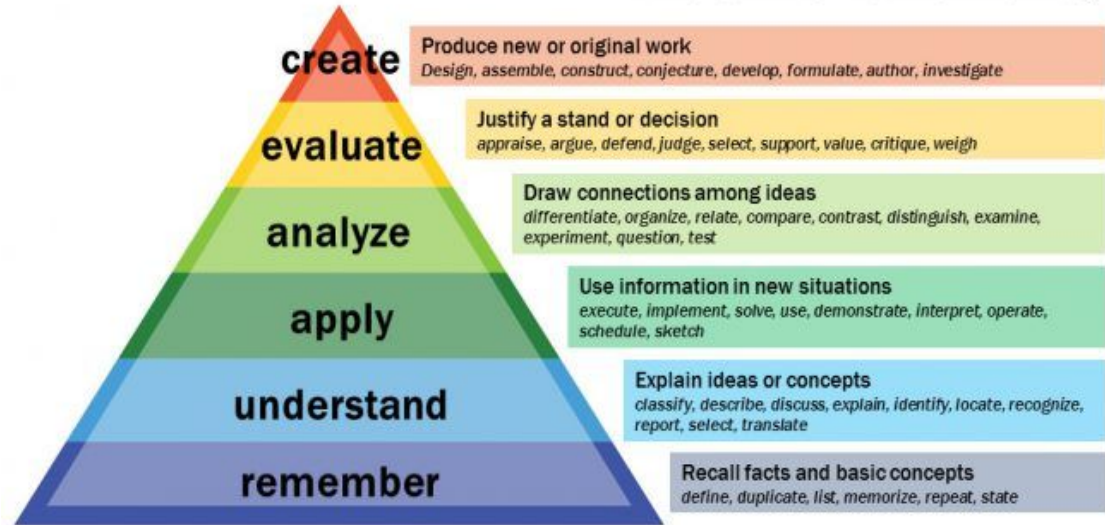
OR...

Identify an *assessment* that you use that is currently a lower Bloom's level. This could be:

- An in-class activity
- An exam question
- A paper
- A homework assignment

Have one in mind? Great!

Bloom's Taxonomy



Step 2: Analyze the task

Use AI to dissect the components of a lower-level activity or question. Through dialogue with AI, analyze these components to identify associated cognitive skills, which will inform the adaptation of the task to a higher level.

To create your prompt(s):

1. **Provide Context:** Start by identifying your role and explaining the activity or question you want AI to analyze. For instance, "I am a [title] of [discipline] at a [type of institution] teaching [level/course] students. I need assistance with a task where students define and explain *the social psychological principles of persuasion*. Can you help identify the skills involved?"
2. **Clarify the Task:** Clearly outline the task. For example, "Students are tasked with defining *the social psychological principles of persuasion* and explaining the process in simple terms." [Consider combining this with #3. Why?]
3. **Describe Components:** Break down the task components, for example, "Can you help me break down its components to see what skills are involved?"
4. **Ask for Analysis:** Prompt AI to analyze these components: "Could you break down each component and discuss the cognitive skills required for students to achieve them?"
5. **Engage in Dialogue:** Interact with AI as it analyzes each component. Pose follow-up queries to deepen the analysis.

Step 3: Identify higher level Bloom's Verbs

Look for higher-level Bloom's verbs for applying or analyzing the concept. For applying, verbs like "demonstrate," "apply," "illustrate," or "use" are appropriate. For analyzing, verbs like "analyze," "evaluate," "synthesize," or "compare" are good fits.

To create your prompt(s):

- 1. Provide Context:** Start by providing context about the lower-level activity you've analyzed. For example: "I have analyzed a task where students define and explain *the social psychological principles of persuasion*. Now, I want to adapt it to target higher-level thinking. Can you suggest appropriate Bloom's Taxonomy verbs for this?"
- 2. Specify the Goal :** Clearly state your goal of incorporating higher-level Bloom's Taxonomy verbs into the adapted activity. For example: "I want to encourage students to apply or analyze *the social psychological principles of persuasion* rather than just recalling and understanding it." [Again, consider combining this with #3.]
- 3. Request Suggestions:** Prompt AI to suggest appropriate Bloom's Taxonomy verbs that align with your goal. You can say something like: "Could you suggest verbs that would prompt students to apply or analyze *the social psychological principles of persuasion* in a higher-level activity?"
- 4. Evaluate Suggestions:** Evaluate the suggestions provided by AI and consider how each verb aligns with your goal of targeting higher-level thinking in the adapted activity.

Step 4: Transform the task

Rewrite the question or activity to incorporate higher-level Bloom's verbs.

Refine Instructions: Based on the suggestions provided by AI, refine the instructions to incorporate the selected higher-level Bloom's Taxonomy verbs. Ensure that the language used is clear, concise, and conducive to promoting higher-level thinking. Consider the following approaches:

1. **Provide Contextualization:** Prompt AI with the concept or topic you're teaching and ask for real-world scenarios or examples that demonstrate its relevance. For example, "Can you share real-world examples to demonstrate the practical relevance of *the social psychological principles of persuasion*? This aids student understanding."
2. **Incorporate Multifaceted Approaches:** Ask AI for suggestions on how to diversify the assignment to encourage students to approach it from multiple perspectives or through various modes of inquiry. For instance, "How can I design this assignment to encourage students to analyze data, conduct research, engage in debates, or create multimedia presentations?"
3. **Require Justification or Explanation:** Prompt AI to suggest ways to incorporate justification or explanation requirements into your assignment instructions. You might ask, "How can I modify the assignment instructions to prompt students to justify their responses or explain their reasoning?"
4. **Create Authentic Assessment Tasks:** Ask AI about designing assessment tasks that mirror real-world challenges or problems relevant to the concept. You can say, "I want to create assessment tasks that simulate real-world challenges related to *the social psychological principles of persuasion*. How can I design tasks that require students to apply their knowledge in meaningful contexts?"

Step 5: Assess the new task

Plan assessment for the higher-level task. Consider criteria like critical thinking, depth of analysis, evidence use, and argument coherence. Use AI feedback to refine rubrics, ensuring clarity, specificity, and alignment with learning outcomes. Adjust as needed to support higher-level thinking.

- 1. Align to Learning Outcomes:** Ensure that the refined activity aligns with your course's learning outcomes or objectives related to higher-level thinking skills. Clearly communicate to students how the activity contributes to their overall learning goals. "Can you help ensure my activity aligns with higher-level thinking objectives? Also, how can I clearly communicate its importance to students' overall learning goals?"
- 2. Discuss Criteria and Levels of Performance:** Engage in a dialogue with AI to discuss the criteria for assessment. Prompt to AI: "Can you provide insights on the criteria for assessment and the levels of performance within each criterion for evaluating students' performance at a higher-order Bloom's level? Specifically, what distinguishes excellent, proficient, basic, and inadequate performance?"
- 3. Create or Refine Rubrics/Criteria:** Based on the AI feedback, develop clear criteria or rubrics for assessing students' performance on the refined activity. Clearly outline expectations for higher-level thinking skills such as analysis, synthesis, and evaluation, and provide examples of exemplary responses.

Step 6: Feedback and Reflection

After students complete the new task, provide feedback that helps them understand the strengths and areas for improvement in their application or analysis of the concept. Encourage reflection on their thinking processes and strategies used.

Prompt: "After students complete the adapted task, what type of feedback would be most helpful in guiding their understanding of the concept and their higher-level thinking skills?" Consider the following ideas:

Clarification and Explanation: Clarify any misconceptions and explain key concepts clearly to enhance understanding.

Highlight Strengths and Address Weaknesses: Recognize strengths in higher-level thinking skills and provide specific examples. Address areas for improvement with constructive feedback and actionable suggestions. Offer specific suggestions for enhancing critical thinking, problem-solving, or analytical skills, focusing on actionable steps for improvement.

Encourage Reflection: Prompt students to reflect on their approach to the task. Encourage metacognition with questions like: 'How did you tackle the problem? What strategies were effective? How could you approach it differently next time?'

Promote Self-Assessment: Encourage students to self-assess their performance against the criteria and standards set for the task. Provide tools or checklists for self-assessment and encourage students to reflect on their strengths and areas for improvement.

Foster Growth Mindset: Encourage a growth mindset by highlighting the value of perseverance and effort. Reinforce the idea that challenges are opportunities for learning and improvement and provide positive reinforcement for their efforts and progress.



Q & A



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