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Develop your teaching your way

Generative AI in Practice: A Guided Introduction for Educators

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The Science of Learning Meets AI:

A Practical Faculty Guide to Promote Integration, Student Engagement, and Ethical Practice

Activities in the book…

- TILTing Your Assignments for Clarity
- Aligning with Institutional Learning Outcomes
- Creating Rubrics
- Creating Additional Support Materials
- Synthesizing Student Feedback (Muddiest Point)
- Analyzing Course Evaluations
- Clear Communication – Reducing Ambiguity
- Multiple Means of Action & Expression – Beyond the Traditional Assessment
- Systematic Accessibility Review – Building Inclusive Habits
- Multiple Means of Representation – Making Content Accessible
- Identity & Belonging – Creating Inclusive Examples
- Cognitive Load Management – Breaking Down Complex Materials
- First-Day Intros that Lower Friction
- Structured Discussion Protocol with Rotating Roles
- Ongoing Community Check-Ins
- Syllabus Language Audit for Belonging
- Class Norms Co-Creation Protocol
- Attendance Pattern Analysis for Early Intervention
- Reverse-Engineering Your Learning Goals
- Evidence Before Activities
- Formative Feedback Loops
- Cognitive Pathway Mapping
- Authentic Performance Tasks
- Outcome Evolution Tracking
- Attention Leak Audit
- Retrieval Practice Generator
- Interleaved Practice Design
- Memory Trace Strengthener
- Spaced Review Calendar
- Metacognitive Check-In System
- Assignment Difficulty Calibrator
- Scaffolded Explanation Builder
- “How Did You Know?” Metacognitive Prompt Library
- ZPD Check-In Designer
- Tiered Application Task Designer
- Autonomy Readiness Tracker
- Expectation Translator
- Cognitive Apprenticeship Builder
- Metacognitive Reflection System
- Think-Aloud Script for One Sticky Step
- Higher-Order Assessment Designer
- Learning Strategy Evolution Tracker
- Productive Failure Design
- Autonomy-Competence-Relatedness Check-In
- Growth Recognition Reflection Designer
- Encouragement Calibrator
- Struggle Normalization Dashboard

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Ed Psych Concepts in the Book…

- Automaticity
- Backward Design
- Bloom's Cognitive Taxonomy
- Center for Applied Special Technology (CAST)
- Cognitive Apprenticeship
- Cognitive Load
- Consolidation
- Encoding
- Gradual Release of Responsibility (GRR)
- Growth Mindset
- Hidden Curriculum
- High-Impact Practices (HIPs)
- Interleaving
- Large Language Model (LLM)
- Metacognition
- Outsourcing Thinking
- Retrieval
- Scaffolding
- Schema Activation
- Self-Determination Theory
- Self-Efficacy
- Self-Regulation
- Smart Outcomes (SMART)
- Spaced Retrieval/Spaced Recall
- Substitute, Add, Modify, Replace (SAMR)
- Testing Effect
- Transparency in Learning and Teaching (TILT)
- Universal Design for Instruction (UDI)
- Universal Design for Learning (UDL)
- Zone of Proximal Development (ZPD)

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- **ADAPT**: TILTing an Assignment
- **CREATE**: A Bloom's Level Tune-Up
- **EMBED**: Backward Designing weekly check points

“Two” many shiny objects

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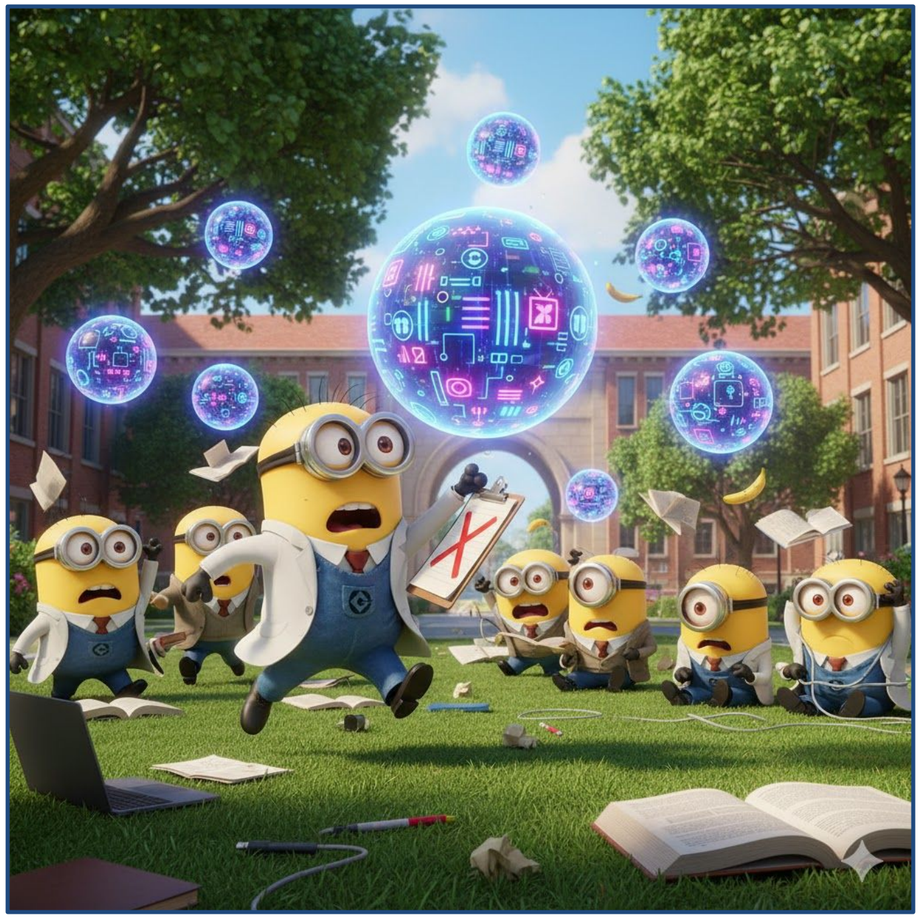

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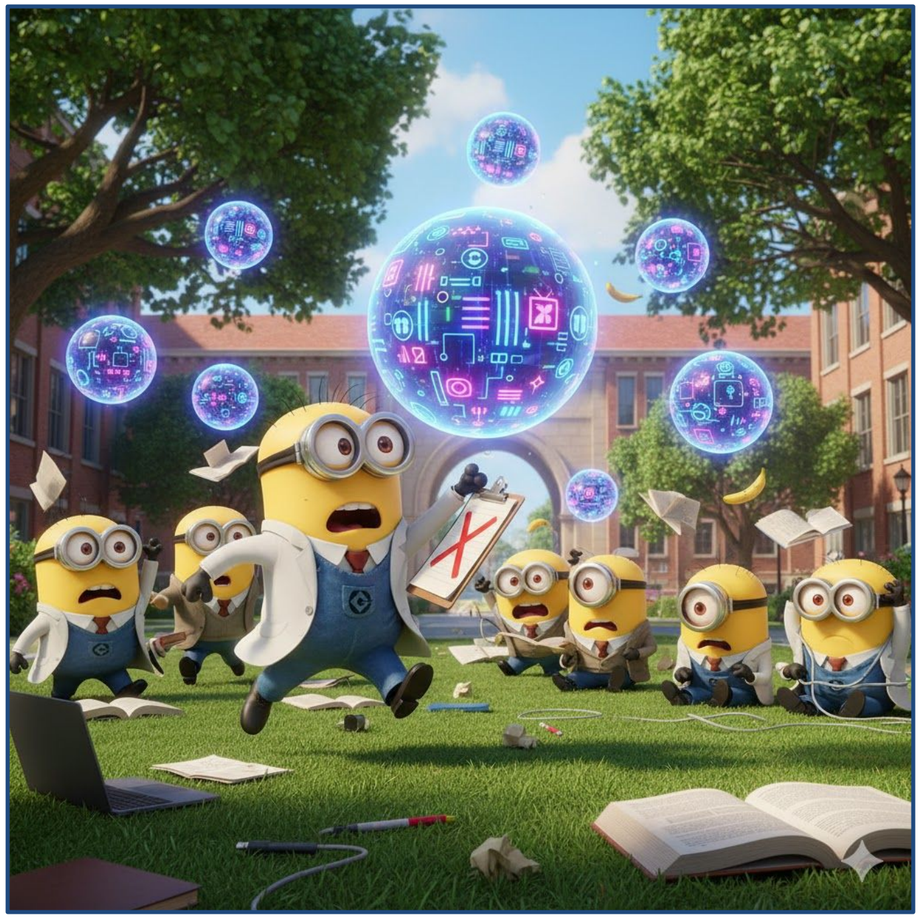


ACE Model

- **ADAPT** : TILTing an Assignment
- **CREATE** : A Bloom’s Level Tune-Up
- **EMBED** : Backward Designing weekly check points

ADAPT: TILTing an Assignment (Transparency in Learning and Teaching)

ADAPT: TILTing an Assignment (Transparency in Learning and Teaching)

Three Key Elements:

1. **Purpose** – Why are students doing this task?
2. **Task** – What exactly are they being asked to do?
3. **Criteria** – How will success be measured?

Source: Mary-Ann Winkelmes (2009), Transparency in Learning and Teaching Project

ADAPT: TILTing an Assignment (Transparency in Learning and Teaching)

Three Key Elements:

1. **Purpose** – Why are students doing this task?
2. **Task** – What exactly are they being asked to do?
3. **Criteria** – How will success be measured?

Who it helps:

- Supports all students
- Especially benefits first-generation and underrepresented students

Source: Mary-Ann Winkelmes (2009), Transparency in Learning and Teaching Project

ADAPT: Try this prompt...

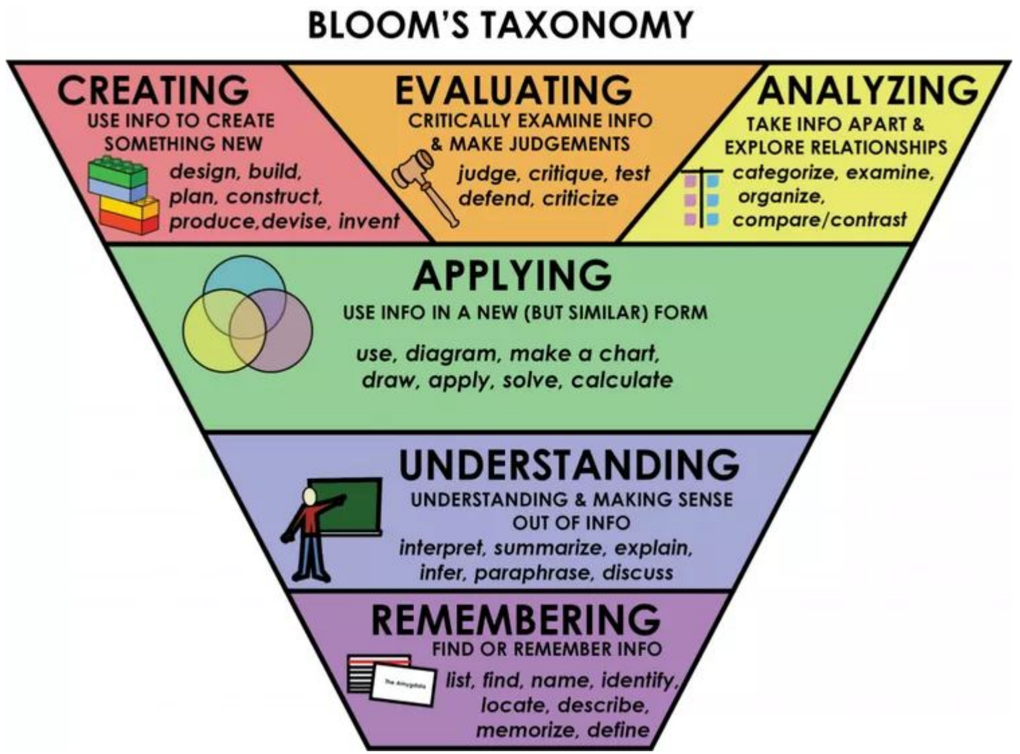
Upload your assignment file to genAI, then ask:

"Can you TILT - Transparency In Learning and Teaching framework - this assignment?"

Example with **ChatGPT FREE ACCOUNT**: Link to ChatGPT ADAPT Example

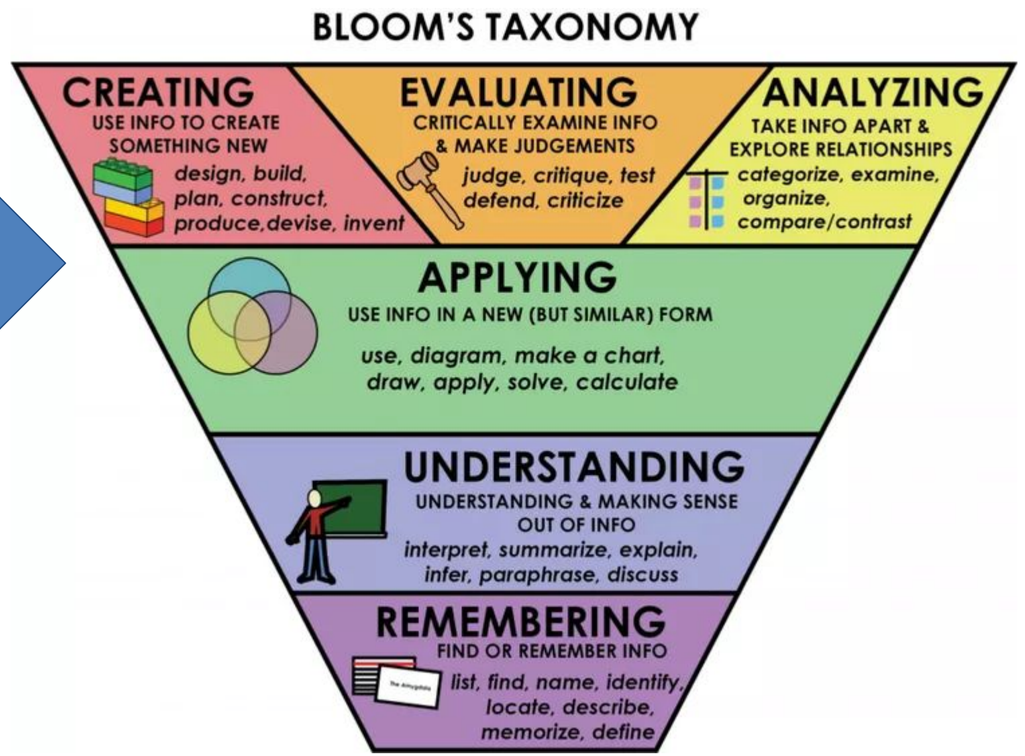
File Uploaded:Adapt: Psychology Example

CREATE: A Bloom's Level Tune-Up



Source: Bloom, B. S. (1969). *Taxonomy of educational objectives*
Image: Rawia Inaim / Kwantlen Polytechnic University

CREATE: A Bloom's Level Tune-Up



Source: Bloom, B. S. (1969). *Taxonomy of educational objectives*
Image: Rawia Inaim / Kwantlen Polytechnic University

CREATE: Try this prompt...

First, briefly describe the context:

"In my [**course name**], I want students to be able to [**specific skill or concept**]."

Then provide an example:

"Here's a typical question I currently use: [paste your current assessment question or describe it]."

CREATE: Try this prompt...

First, briefly describe the context:

"In my [**Intro to World History**], I want students to be able to [**conduct causation analysis**]."

Then provide an example:

"Here's a typical question I currently use: [**Explain how mercantilism shaped Santo Domingo trade and plantations using course evidence.**]."

...prompt continued:

Design an assessment that requires students to [**analyze**] related to this concept. The task should:

- Require students to work with new material
- Demand reasoning and judgment
- Be resistant to simple AI completion
- Include a rubric

Provide the task instructions, the scenario or materials needed, and the evaluation criteria.

Example with ChatGPT Free: Link to ChatGPT CREATE Example

EMBED: Backward Designing weekly check points

EMBED: Backward Designing weekly check points

1. **Outcomes**—What students will know/do
2. **Evidence**—how they'll show it
3. **Learning**—activities to get them there

Source: McTighe and Wiggins, *Understanding by Design* (1998, 2005)

EMBED: Try this prompt...

Unit learning outcome: [**paste your outcome**]

Unit weeks:[**number**]

Design weekly formative checks that scaffold to outcome

Describe what good answers include and typical misconceptions

Max 5 minutes per check

EMBED: Try this prompt…

Unit learning outcome: [**Calculate and interpret price, income, and cross-price elasticities; relate elasticity to revenue.**]

Unit weeks:[**4**]

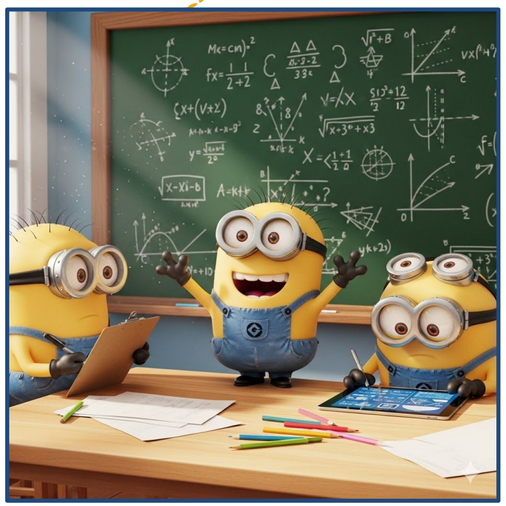
Design weekly formative checks that scaffold to outcome

Describe what good answers include and typical misconceptions

Max 5 minutes per check

Example with ChatGPT Free: Link to ChatGPT EMBED Example

I have an idea...



- **Progress-Language Rewriter (Growth Mindset & Persistence).**
  - Rewrite my assignment in Growth Mindset language

- **Imperfect Examples (Strategic Learning:).**
  - Use side-by-side samples (Needs Work / Proficient / Excellent) so students evaluate quality before producing.

- **Biweekly Metacognition (Self-Regulated Learning).**
  - Add a 5–7 minute, every-other-week check-in that prompts plan → monitor → evaluate.

Pro tip: Convert ideas into useful prompts

TEMPLATE: I teach [**insert course name**] to [**insert number of**] students in [**insert discipline**]. Help me create a genAI prompt for this teaching goal: [**Paste example of genAI use in this stage here**]. Give me a complete, ready-to-use prompt I can enter into genAI, along with instructions on how to use it.

Pro tip: Convert ideas into useful prompts

TEMPLATE: I teach [**Intro Calculus**] to [**30**] students in [**Mathematics**]. Help me create a genAI prompt for this teaching goal: [**Rewrite my assignment in Growth Mindset language**]. Give me a complete, ready-to-use prompt I can enter into genAI, along with instructions on how to use it.

Example with ChatGPT Free: Link to ChatGPT Prompt Template Example

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Thank you!

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