

AI-Powered Assessments: Creating Multiple Choice Magic with Best Practices



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Digital Handout: [TINYURL.COM/AIMCMAGIC](https://tinyurl.com/aimcmagic)

Objectives

In this presentation, we will:

- Discuss CTE's work in AI and MC assessment
- Explain training AI to use MCQ best practices
- Examine examples and identify steps forward



CTE's Work with AI and Assessment



Issues with MC Tests

Many professors that use MC tests:

- Find crafting MCQs labor-intensive
- Lack formal training in creating MCQs
- Are unaware of best practices for MCQs



AI and MCQs

AI can help:

- Generate a large volume of MCQs in a short amount of time
- Customize MCQs based on content
- Creating higher order MCQs



Quality of MCQs

“A Review of Multiple-Choice Item-Writing Guidelines for Classroom Assessment” (Haladyna, Downing, & Rodriguez, 2002)

- List of best practices for MCQs
- Complex and labor-intensive process



Training AI to Use MCQ Best Practices



Training AI

1. Provide best practices
2. Provide content
3. Provide prompt for MCQ generation



Training AI

 New chat

Today

I'm going to give you some rules for writing multiple choice questions. Then I want you to use those rules to write questions based on a prompt that will follow. Are you ready for the rules?

 Copilot

Absolutely, I'm ready! Please go ahead and share the rules for writing multiple choice questions. I'll make sure to follow them closely. 😊

 Edit in Pages

 Copy







AI-generated content may be incorrect

Rules for Content

1. Every question should focus on a specific topic and require just one type of thinking, as defined in the test guidelines (two-way grid, test blueprint).
2. Only create questions about important and meaningful content; do not include trivial or unimportant details.
3. Use new and unique material to test higher-level thinking skills. Change the wording from textbooks or classroom instruction to avoid simply testing memory.

What is the prompt for the questions?

Can you give an example topic to use?



Ask me anything...

   



Training AI

information processing model 9.pdf Create 15 multiple choice questions based on the content in the attachment. The questions should be for a junior level college psychology course. Include a mix of basic recall questions and higher-order thinking questions that require application, analyzation, and evaluation. Make sure to use different types of multiple choice questions as stated in the rules I provided, such as alternate choice questions, matching, and so on. Indicate the correct response and the page number of the document where the page number can be found. Provide a rationale for the correct answers.



Here are 15 multiple-choice questions based on the content of the "Information Processing and Memory: Theory and Applications" document. These questions are designed for a junior-level college psychology course and include a mix of basic recall and higher-order thinking questions. I've used different types of multiple-choice questions as per your rules.

Questions

1. Which of the following researchers defined cognition as the study of how people encode, structure, store, retrieve, use, or otherwise learn knowledge?
 - A. Bartlett
 - B. Neisser
 - C. Schacter
 - D. Tulving

Can you provide more questions?

What topics should I focus on next?

How can I improve these questions?



Ask me anything...





Examine Examples and Identify Next Steps



Example 1: Basic Recall

What is the primary area of cognition studied by researchers according to the document?

- A. Perception
- B. Memory
- C. Language
- D. Problem-solving

Correct Answer: B (Page 1)

Rationale: Memory is highlighted as a key area of study within cognitive psychology, with various theories and models discussed.



Example 2: Higher Order

A student is preparing for an exam and wants to use effective study techniques based on the levels of processing model. Which study technique should the student use to ensure deep processing of information?

- A. Repeating information multiple times without understanding.
- B. Creating meaningful connections and elaborating on the material.
- C. Skimming through the material quickly.
- D. Focusing solely on memorizing definitions.

Correct Answer: B (Page 7)

Rationale: Creating meaningful connections and elaborating on the material ensures deep processing.



Example 3: Matching

Match the following components of Sternberg's triarchic theory of intelligence with their descriptions:

1. Metacomponents

2. Performance Components

3. Knowledge-Acquisition Components

A. Actions taken in problem-solving

B. Guide planning and decision making

C. Ability to learn new information

Correct Answer: 1-B, 2-A, 3-C (Page 13)

Rationale: Each component plays a distinct role in Sternberg's model of intelligence.



Example 4: True/False

The levels of processing model argues that memory is processed serially through three stages.

A. True

B. False

Correct Answer: B (Page 7)

Rationale: The levels of processing model suggests that memory is processed at multiple levels simultaneously, not serially.



Considerations

AI:

- Preferred conventional MCQs
- Produced more recall questions
- Created higher order with iteration
- Can double check its work
- Still requires review



Next Steps

- Training “Multiple Choice Expert” Copilot Agent
- Sharing best practices preset in Navigator AI

References

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THANK YOU!

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