MONTGOMERY COLLEGE

COGNITIVE LOAD MADE SIMPLE

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NOVEMBER 7, 2025

LEARNING OUTCOMES

- Understand cognitive overload.
- Apply effective strategies for breaking down complex content into manageable chunks.
- Use diverse delivery formats to enhance information processing and retention.

UNDERSTANDING COGNITIVE LOAD

Cognitive load refers to the amount of mental effort being used in the working memory.

Types include:

- Intrinsic Load: complexity of the material
- Extraneous Load: how the material is presented
- Germane Load: effort to create a schema

CHUNKING COMPLEX CONTENT

Strategies:

- Break content into smaller units
- Use headings and subheadings
- Provide summaries and previews
- Use visuals to support text

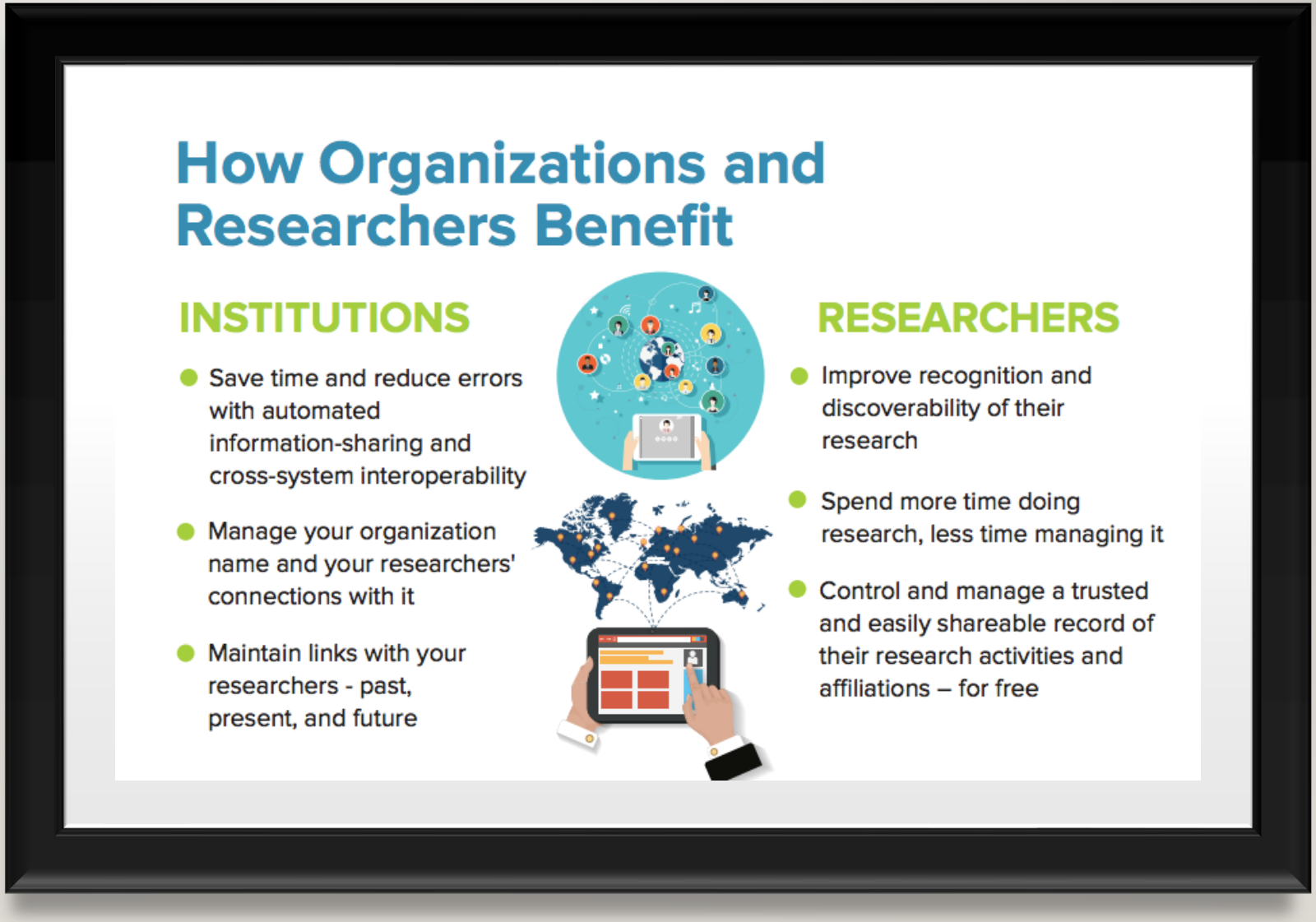
ENHANCING INFORMATION PROCESSING

Use multiple formats:

- Visual (e.g., diagrams, videos)
- Auditory (e.g., lectures, podcasts)
- Kinesthetic (e.g., hands-on activities)
- Textual (e.g., readings, notes)

ENHANCING INFORMATION PROCESSING

Using an Infographic



MONITORING UNDERSTANDING

Techniques:

- Polls and quizzes
- Exit tickets
- Think-pair-share
- Muddiest point

ACTIVITY

In small groups, provide a brief plan for redesigning a lesson using one of these techniques:

1. Chunking
2. Multiple formats

Share your redesign with the group.

REFLECTION

THINK OF A LESSON THAT STUDENTS STRUGGLED WITH. HOW COULD YOU REDESIGN IT TO REDUCE COGNITIVE LOAD?

RECAP

Cognitive Load Theory

It distinguishes **three types of cognitive load**:

- **Intrinsic load**: complexity inherent in the material.
- **Extraneous load**: caused by poor instructional design.
- **Germane load**: supports schema construction and deep learning.

RECAP

Examples of Chunked Learning Material:

- **Micro-learning objects** (short videos or readings).
- **Step-by-step worked examples** for problem-solving.

RECAP

Formative Assessment Tools

Tools include:

- **Classroom response systems** (clickers, polling apps).
- **One-minute papers**.
- **Online quizzes** with instant feedback.

REFERENCES

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