

# Media and Technology in Learning 2

## Unit 9

EDUC 715 – Spring 2020  
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# Agenda

- Overview of online classes
- Empirical article presentations
- 10 minute Break
- Evaluating Cognitive Load in multimedia activities
- Choosing multimedia activities
- Final project demonstration and workshop

# Strategies for Reducing Cognitive Overload in Multimedia Instruction

1. Off load: Move some essential processing from visual to auditory channel
2. Segment: Allow time between successive bite-size segments
3. Pre-train: Provide pre-training in names and characteristics of components
4. Weed: Eliminate interesting but extraneous material

Mayer, R. E., & Moreno, R. (2003). Nine ways to reduce cognitive load in multimedia learning. *Educational Psychologist*, 38(1),43-52.

5. Signal: Provide cues for how to process the material
6. Align: Place printed words near corresponding parts of graphics
7. Eliminate redundancy: Avoid presenting identical streams of printed and spoken words
8. Synchronize: Present narration and corresponding animation simultaneously
9. Individualize: Make sure learners possess skill at holding mental representations

	Appropriate or Acceptable	Marginally Appropriate or Acceptable	Not Appropriate or Acceptable
<p><b>Supports learning outcomes</b></p> <p><i>How does the multimedia support the learning outcomes?</i></p>	Fully supports learning outcomes	Somewhat or partially supports learning outcomes	Does not support learning outcomes
<p><b>Potential for cognitive overload</b></p> <p><i>What potential for cognitive overload might</i></p>	<ul style="list-style-type: none"> <li>Imposes a potentially minimal amount of cognitive overload</li> <li>Follows research-based recommendations to minimize cognitive overload, including: <ul style="list-style-type: none"> <li>Maximizes visual and audio processing</li> <li>Minimizes extraneous details</li> <li>Little to no redundancy effect</li> <li>Little to no split attention</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Imposes a potentially moderate amount of cognitive overload</li> <li>Follows <u>some</u> research-based recommendations to minimize cognitive overload, including: <ul style="list-style-type: none"> <li>Maximizes visual and audio processing</li> <li>Minimizes extraneous details</li> <li>Little to no redundancy effect</li> <li>Little to no split attention</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Imposes a potentially high amount of cognitive overload</li> <li>Follows <u>few</u> research-based recommendations to minimize cognitive overload, including: <ul style="list-style-type: none"> <li>Maximizes visual and audio processing</li> <li>Minimizes extraneous details</li> <li>Little to no redundancy effect</li> <li>Little to no split attention</li> </ul> </li> </ul>
<p><b>Appropriateness for learner prior knowledge</b></p> <p><i>How appropriate is this media given the prior knowledge of the identified learners?</i></p>	Appropriate for learner prior knowledge.	Somewhat appropriate for learner prior knowledge.	Minimally or not at all appropriate for learner prior knowledge.
<p><b>Developmental appropriateness</b></p> <p><i>How developmentally appropriate is this media for the identified learners?</i></p>	Appropriate for learner cognitive, social, emotional, and physical development.	Somewhat appropriate for learner cognitive, social, emotional, and physical development.	Minimally or not at all appropriate for learner cognitive, social, emotional, and physical development.
<p><b>Learning engagement</b></p> <p><i>How engaging and motivating is this media for the identified learners?</i></p>	Incorporates strategies to motivate and engage learners in the learning task.	Somewhat incorporates strategies to motivate and engage learners in the learning task.	Does not incorporate strategies to motivate and engage learners in the learning task.

# Breakout Group Activity 1

- Start a **new** Google Doc in your Design folder.
- Evaluate **one** of the following videos and games and evaluate the amount of cognitive load imposed by each using the rubric and strategies in the previous slides.

1. <https://youtu.be/fPveweV-10Y>

2. <https://youtu.be/ReR0icb-4Vk>

3. <https://www.splashmath.com/>

4. <http://www.cnn.com/videos/world/2015/06/18/rare-deep-sea-creature-spotted-orig.cnn>

# Activity 2

1. Make notes in your curriculum design project about how you will manage cognitive load in your design activities

# Choosing Instructional Media

Steps to designing instruction

1. Create outcomes
2. Develop instructional activities
3. Choose media

# Types of Media

- Lecture
- Seminar
- Tutorial dialog
- Role-playing exercise
- Film/video/animation
- Recorded sound
- Interactive animations or simulations

# Media Selection Step 1: Special Sensory Requirements

- *Do learners need to taste, smell, or touch something in order to achieve the learning outcomes?*

## Media Selection Step 2: Conceptual Authenticity

- *Does the delivery platform simulate all the necessary elements of the environment in the setting where the learners/trainees will apply their knowledge and skills?*

# Media Selection Step 3: Feedback Capacity

- *Does the delivery platform have the capacity to provide immediate corrective feedback to learners/trainees while they are practicing?*

# Media Selection: Steps 1 – 3

## Instructional Media Options

Option 1      Option 2      Option 3

1. Special Sensory requirements?

2. Conceptual Authenticity?

3. Immediate Feedback?

	Option 1	Option 2	Option 3
1. Special Sensory requirements?			
2. Conceptual Authenticity?			
3. Immediate Feedback?			

# Media Selection: Steps 1 – 3

## Instructional Media Options

Option 1

Option 2

Option 3

1. Special Sensory requirements?

**YES!**

2. Conceptual Authenticity?

3. Immediate Feedback?

<b>YES!</b>		
<del></del>	<del></del>	<del></del>
<del></del>	<del></del>	<del></del>

# Steps 1 - 3: Results?

## Instructional Media Options

Option 1

Option 2

Option 3

1. Special Sensory requirements?

No.

2. Conceptual Authenticity?

Yes.

Yes.

Yes.

3. Immediate Feedback?

Yes.

Yes.

Yes.

*How to choose? By COST!*

# Media Selection Step 4: Cost

- *Is the delivery platform cost effective?*

# Final Project

- Curriculum Design
  - Draft of curriculum project up and through Course Overview of Instructional Activities due by next class
    - File > Email collaborators
    - One person in a group emails to KY
- Review sample projects in folder!

# Blackboard Discussion Board

(Will be posted tomorrow)

1. For each reading this week, choose one quote or idea that resonated with you and explain why.
2. How will you change your practice as a result of the readings in these two units?
3. What are some of the big ideas and takeaways from the two units on media and technology?

# For Next Class

(Class will be online via Blackboard)

- Unit 10: Culture, Language, and Learning
- Assignment due:
  - Weekly synthesis
  - Drafts of curriculum design
  - Empirical article presentations
    - 48 hours in advance review and feedback