

Teaching and Learning Seminar Series Summer 2017

Evidence-based instructional video design principles

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Learning objectives

1. To understand the benefits of using videos in teaching.
2. To learn Mayer's multimedia learning theory.
3. To apply the multimedia learning theory in instructional video design.



Activity

Multimedia is more engaging than printed materials.

- Agree
- Disagree
- Neither agree nor disagree



Why multimedia learning?

- Increase student motivation
- Accommodate diverse learning styles
 - Visual, audio, and kinesthetic (Silverman, 2006)
 - Mixed learning style



Why multimedia learning?

“People will generally remember:

10% of what they read

20% of what they hear

30% of what they see

50% of what they hear and see”

(Wiman & Mierhenry, 1969, pp.7-8; cited in Maryshall, 2002)



Richard Mayer's multimedia learning theory

1. Dual coding channels

- Visual
- Auditory

2. Limited processing capacity

- Extraneous processing load impairs learning; information overload.

3. Active processing

- Learners actively process information to organize information into coherent mental representation.



Implications for video design

1. Segmenting

- Chunk the video presentation into small segments.
- Why:
 - Short attention span.
 - Limited processing capacity.



Implications for video design

2. Coherence

- Do not use extraneous words and pictures.
- Don't add unnecessary sound.
- Why: Extraneous material causes learners to engage in extraneous processing.

Less is more!



Implications for video design

3. Signaling

- Highlight essential information.
- Why: Direct student attention.
- How?
 - Add overview at the start of video.
 - Add (sub)headings.
 - Emphasize important ideas vocally.
 - Handwriting/drawing.



Implications for video design

4. Modality

- Students learn better from animation and narration than from animation and onscreen text.
- Use narration instead of onscreen text.
- Why: Onscreen text overloads visual information processing channel.



Implications for video design

5. Redundancy

- Students learn better from animation and narration than from animation, narration, and onscreen text.
- Do not add onscreen text that duplicates narration.
 - Exception: Onscreen text highlights key action described in narration; narration is difficult to understand.
- Why: Onscreen text overloads visual information processing channel.



Implications for video design

6. Personalization

- Present using a conversational style.
- Avoid: emotionless (e.g., GPS style voice).
- Why: Establish social partnership with students.

Khan Academy video: <http://youtu.be/Ohu-5sVux28>



References

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