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The Effect of Short Supplementary Instructional Videos on Online Asynchronous Higher Education Students' Course Engagement and Satisfaction.

By Yana Rulinsky

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Context

SOTL Inquiry Focus: Impact of instructional videos on students' engagement and satisfaction with an online, asynchronous course.

Participants: 7 graduate students and 1 business professional.

Two Courses:

- A text-only online course (Control)
- A text + instructional videos online course (Treatment)

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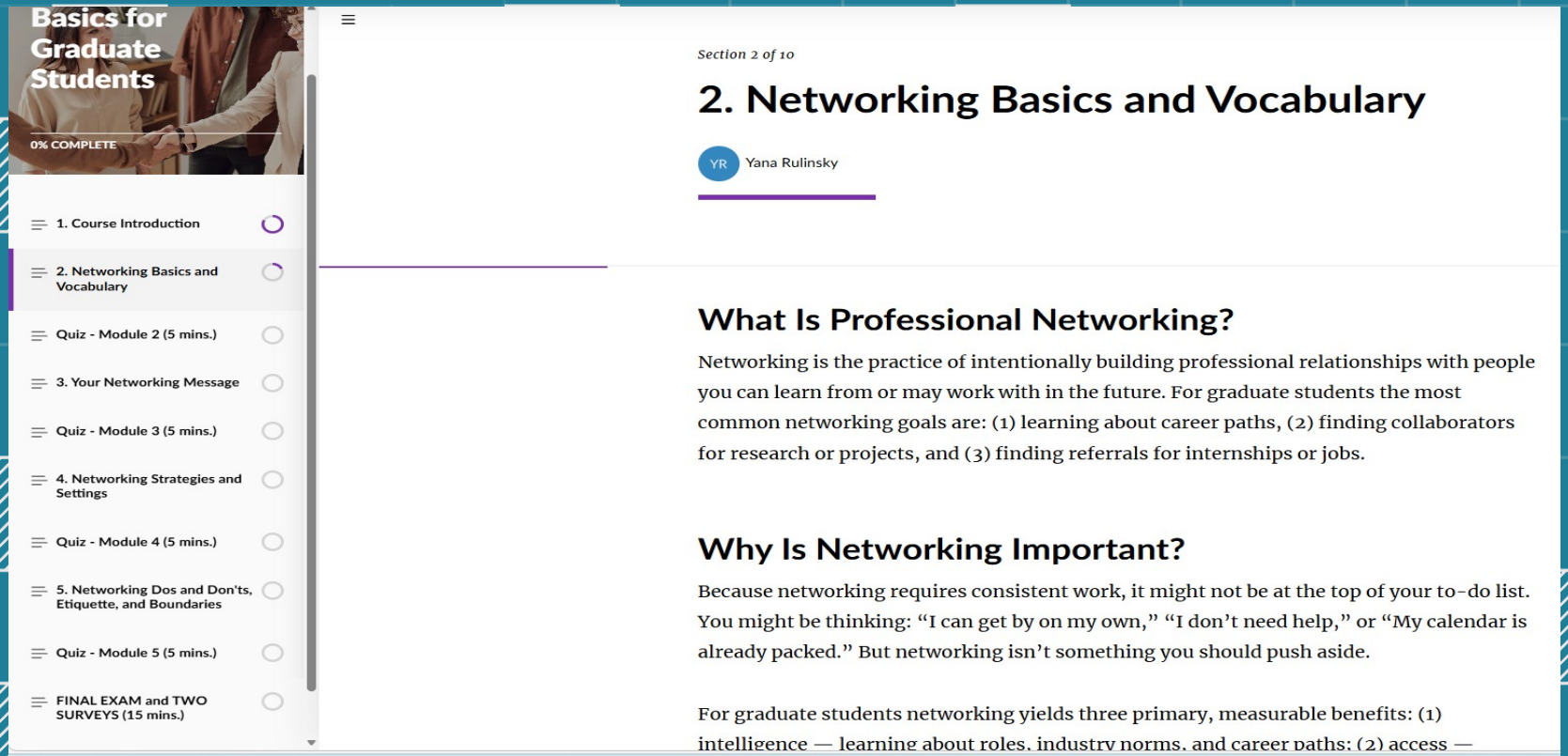
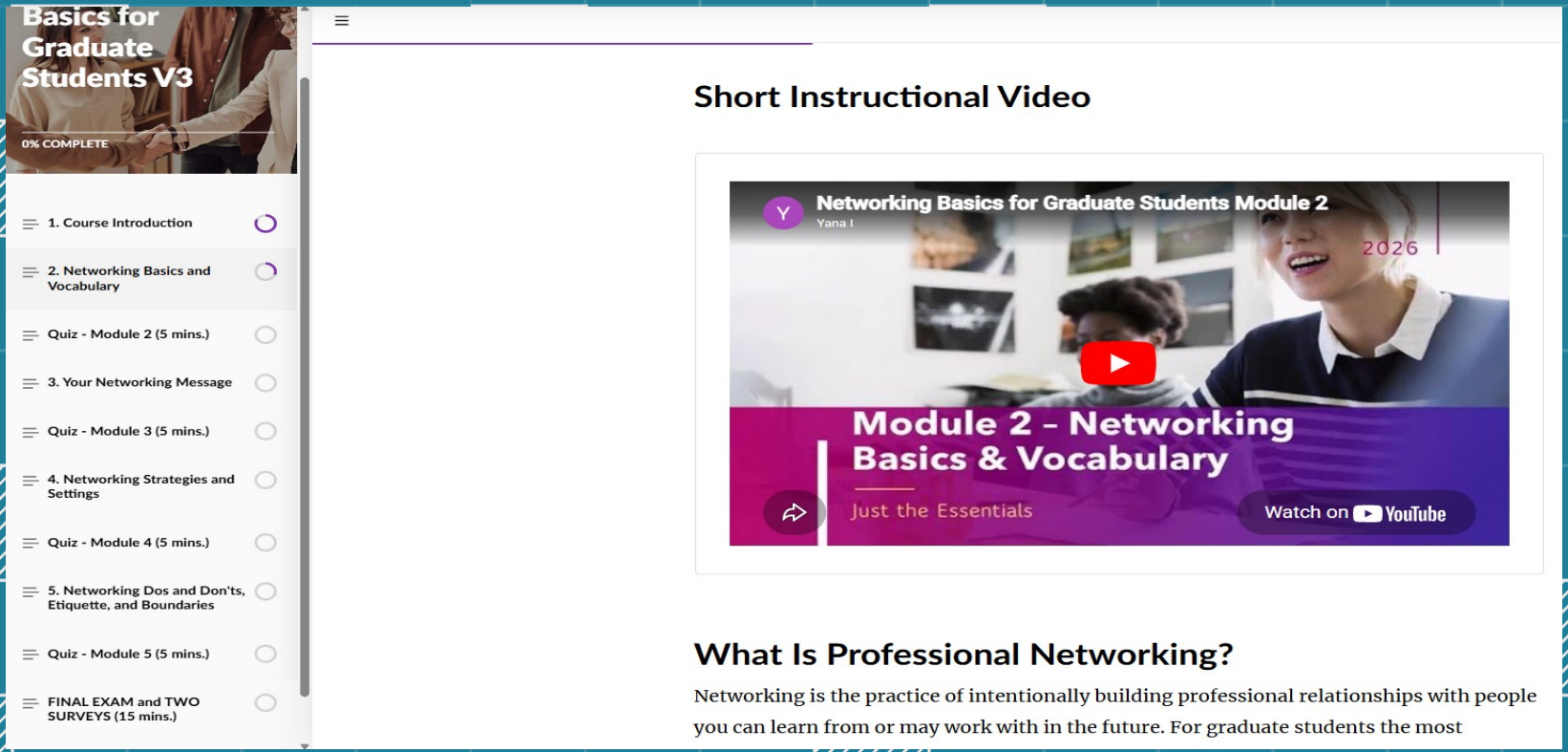
Figure 1. Text-Only Sample Course Module



Note. This figure illustrates sample module contents of a text-only course.

Figure 2. Text + Video Sample Course Module



Note. This figure illustrates sample module contents of a text + video course.

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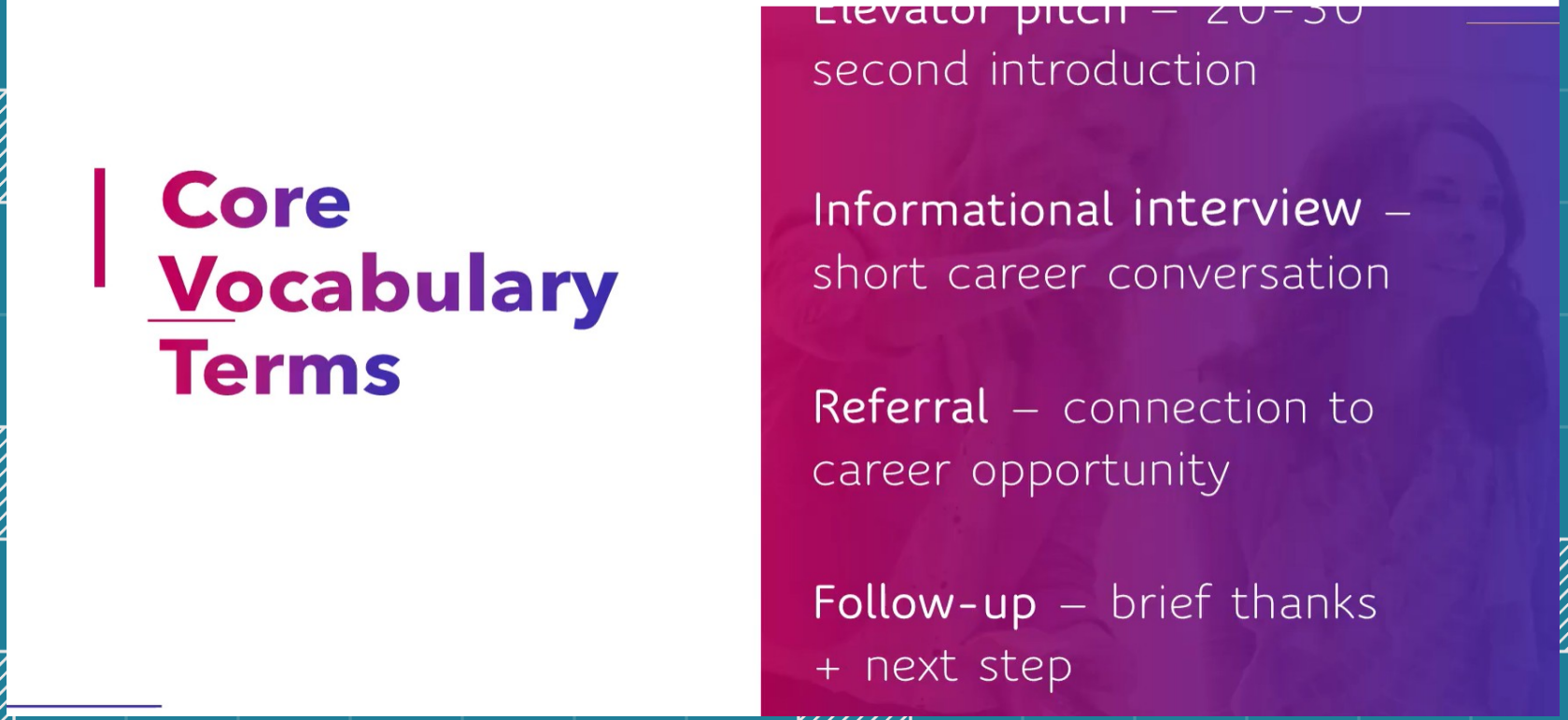
Figure 3. Sample Instructional Video Content



Note. This figure illustrates sample content of an instructional video. Adapted from OpenAI. (2026). *ChatGPT* (March 3, GPT-5.3 version) [Large language model]. https://chat.openai.com/chat

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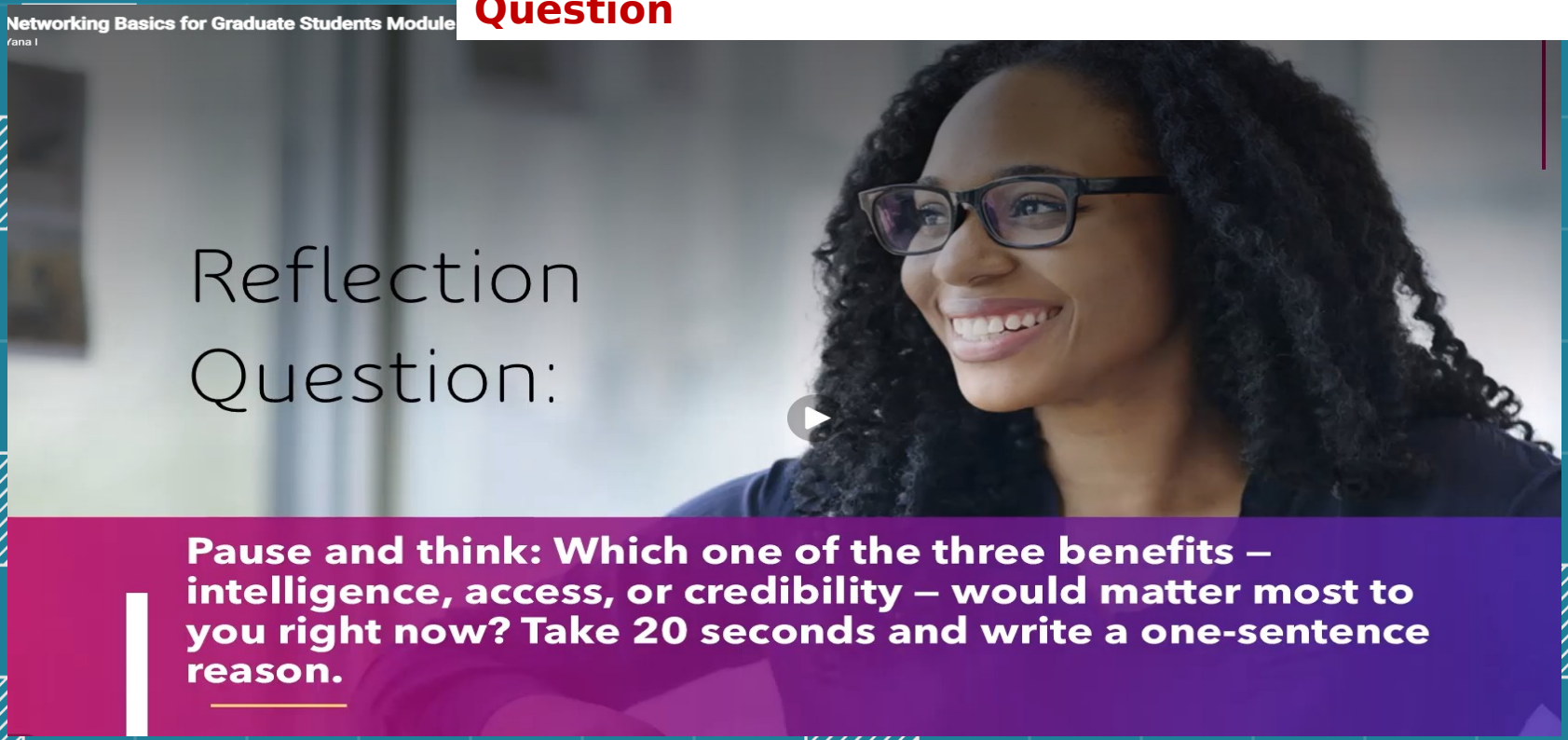
Figure 4. Sample Instructional Video Embedded Question



Note. This figure illustrates sample embedded question in an instructional video. Adapted from OpenAI. (2026). *ChatGPT* (March 3, GPT-5.3 version) [Large language model]. https://chat.openai.com/chat

Problem

SOTL Inquiry Purpose:

- Understand impact of instructional video on students' course **satisfaction** and **engagement**.
- Inform Instructional Design (ID) decisions and contribute to the ID field.

SOTL Questions

Two SOTL Inquiry Questions:

1. In an asynchronous online higher education graduate course, how does adding short supplementary instructional videos to a course containing text-only instructional materials affect students' engagement in the course?

2. In an asynchronous online higher education graduate course, how does adding short supplementary instructional videos to a course containing text-only instructional materials affect students' satisfaction with the course?

Procedure

Participant-Related Procedure Steps:

- Participant Completes Consent Form
- Participant Assigned to Group (Control or Treatment)
- Participant Completes Course, Assessments, and Two Surveys
- Participant Completes Optional Zoom Interview or Questionnaire

Data Collection

Quantitative Data:

- Behavioral Engagement Data - Quiz Scores, Quiz Time, Final Exam Score
- Adapted OSE Engagement Survey
- Adapted eLSS Satisfaction Survey

Qualitative Data:

- Field Notes
- Semi-Structured Interview or Questionnaire

Data Analysis

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Quantitative - Inferential Statistics:

- Cronbach's Alpha (OSE=0.85, eLSS=0.81)
- Mean
- Standard Deviation
- Welch's t-test and p value
- Cohen's d value

Qualitative - Thematic Analysis:

- Transcription
- Keyword selection
- Coding
- Theme Development

Findings (part 1)

Quantitative Data:

- Higher satisfaction in video (Treatment) group
- Possible higher engagement in video (Treatment) group
- Lower quiz scores for video (Treatment) group
- Final exam scores are nearly identical (Treatment & Control groups)

Findings (part 2)

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Interview / Questionnaire:

- Videos are helpful learning aids.
- Multimodal content reinforces learning.
- Multimedia absence results in lower satisfaction and engagement.

Field Notes:

- Multimedia is expected in an online course.
- Presence of multimedia in online course signals quality.
- Studies with human participants present many challenges.

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Table 1. Summary of Results by Participant

Table 1. Summary by Participant

Participant	Group	OSE Mean	eLSS Mean	Avg Quiz %	Final Exam %	Avg Quiz Time (sec)
P1	Control	3	4	97.5	95	132
P2	Control	3.45	4.3	100	100	126
P3	Control	3.7	4.2	100	100	91
P4	Control	3.6	4.3	100	100	132
P5	Control	3.85	4.3	97.5	95	93
P6	Treatment	4.2	4.9	92.5	100	92
P7	Treatment	4.3	4.7	95	100	106
P8	Treatment	4.05	4.7	90.8	100	100

Note. This table shows summary of course performance and mean survey data for each inquiry participant.

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Table 2. Group Summary Statistics

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Variable	Control Mean	Control SD	Treatment Mean	Treatment SD
OSE Engagement	3.52	0.55	4.19	0.53
eLSS Satisfaction	4.22	0.3	4.77	0.12
Quiz Accuracy (%)	99	2.24	92.8	4.93
Final Exam (%)	98	4.47	100	0
Quiz Time (sec)	114.8	53.3	99.3	16.9

Note. This table shows the mean and standard deviation values by participant group assignment (control vs. treatment)

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Table 3. Inferential Statistics

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Outcome	Test	t	p-value	Cohen's d	Interpretation
eLSS Satisfaction	Welch t-test	-3.7	0.011	2.19	Treatment higher effect
OSE Engagement	Welch t-test	-1.73	0.151	1.25	Not significant
Quiz Accuracy	Welch t-test	4.34	0.0035	-3.09	Control higher
Final Exam	Welch t-test	-0.94	0.37	0.63	No difference
Quiz Time	Welch t-test	0.58	0.57	-0.36	No difference

Note. This table shows inferential statistics data and interpretation of statistics for each SOTL Inquiry outcome. From OpenAI. (2026). *ChatGPT* (March 3, GPT-5.3 version) [Large language model]. https://chat.openai.com/chat

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Table 4. Quiz Performance by Participant Group

Table 4. Quiz Performance by Group

Quiz	Control Mean (%)	Treatment Mean (%)	Difference
Module 2 Quiz	100	93	Control higher
Module 3 Quiz	100	95	Control higher
Module 4 Quiz	97	90	Control higher
Module 5 Quiz	99	93	Control higher

Note. This table show quiz performance by participant group (control vs. treatment)

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Table 1. Interpretation of SOTL Inquiry Outcomes

Outcome type	Result	Interpretation
Course satisfaction (eLSS)	Significantly higher in video group	Strongest statistical evidence
Engagement (OSE)	Higher mean but not significant	Suggestive but underpowered
Quiz performance	Higher in text group	Likely measurement artifact
Final exam	Essentially equal	Learning outcomes equivalent

Note. This table shows the result and interpretation of each SOTL Inquiry outcome.

Discussion

Expected Findings: Increased student satisfaction and possible increased engagement in the video (Treatment) group.

Surprising Findings: Reduced average quiz scores and lesser time spent on quizzes in the video (Treatment) group.

Unexpected Findings: Presence of multimedia is expected and signals online course quality.

My Positionality in SOTL Process

Multiple Points of Influence: design authority, data control authority, data analyst authority, reporting authority.

Possible Bias: personal regard for multimedia learning solutions.

Safeguards Against Bias: validated survey instruments, anonymized student data, neutral language used in all instruments and communication, disclosure of positionality.

Revisiting Literature

Findings Confirming Prior Research:

- Videos positively affect student satisfaction and engagement in an online course. (Choe et al., 2019) (Draus et al., 2014) (Noetel et al., 2021)
- Videos may reduce students' Cognitive Load. (Chandler & Sweller, 1991) (Mayer & Moreno, 2003)
- Videos may enhance students' understanding via Dual-channel Cognitive Processing. (Mayer & Moreno, 2003) (Mayer, 2024)

Findings <u>NOT</u> Confirming Prior Research:

- Videos are unlikely to hurt and usually improve student learning and performance. (Noetel et al., 2021) (Zhu et al., 2022)

Implications

For Instructional Designers:

- Videos may increase students' satisfaction and engagement in an online course.
- Videos and multimedia are expected in an online course.
- Videos signal course quality.

For Faculty and Educators:

- Videos may affect students' study behavior in a course.
- Videos may affect students' academic performance in a course.

Conclusion

Inquiry findings show that:

- Instructional videos may increase students' satisfaction and engagement in an asynchronous, online course.
- Instructional videos may affect study behavior or students' academic performance in an asynchronous, online course.

Thank You very much

for your time and attention!

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