Do Distracted Students Take Incomplete Notes and Learn Less?

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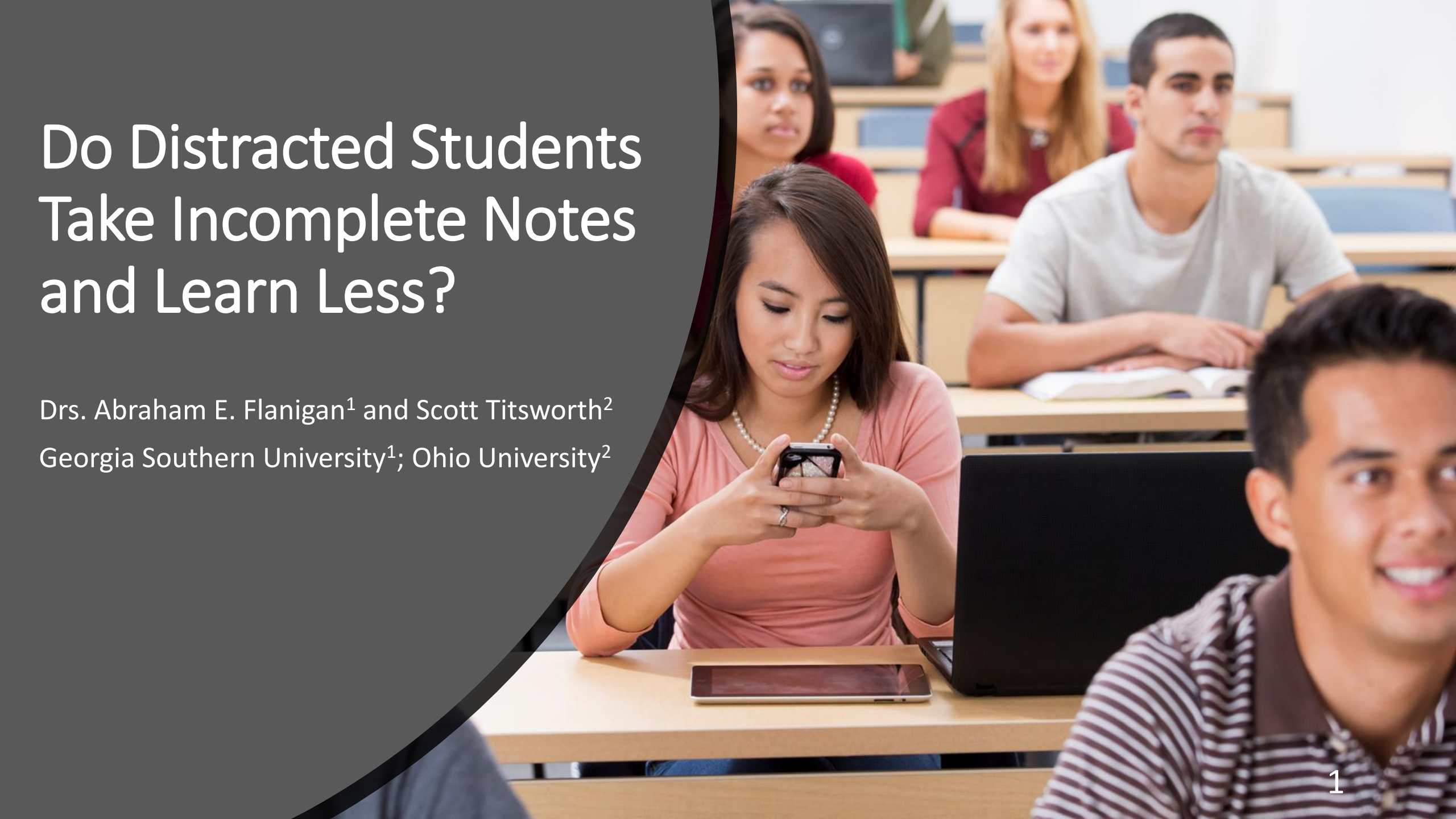

Overview

- Literature Review
  - College student lecture notes
  - Digital distraction
- Gaps in the Existing Literature
- The Present Research
  - Questions/Predictions and Methods
- Findings and Discussion

Literature Review: Lecture Notes

- Most students take notes during class and review those notes as their primary exam preparation strategy
- Laptop versus longhand note-taking methods
- Too early to declare one method superior to the other?

https://www.ecampusnews.com/2014/01/29/note-taking-988/

Literature Review: Digital Distraction

- Digital distraction phenomenon
- Frequency
- Consequences

https://techcurruoit.wordpress.com/2016/06/09/digital-devices-in-the-classroom-asset-or-distraction/

Gaps in Existing Literature

- No consideration for the presence of distractions while students take notes

- Focus on quantity of complete idea units stored in student notes

What are Incomplete Idea Units?

- Idea units are propositions from a text or from spoken word that communicate meaning (e.g., cause-effect; compare-contrast; stand-alone facts)
  - Complete, intelligible idea

- For instance, “The crust is 25 miles thick underneath the continental surface”

- Incomplete idea units are partial statements that fail to capture the meaning of the full proposition

- For instance, “Crust = 25 miles thick”

- “Identification-only” versus “Identification + Incomplete Description”

Research Questions and Hypotheses

- **Do distraction level (texting; no texting) interact with note-taking medium (laptop; longhand) to affect lecture note-taking outcomes and learning?**

  H1: We predicted that texting would be more consequential for longhand note takers due to their speed disadvantage relative to laptop users

- **To what extent to students store incomplete idea units in their notes?**

  H2: The proportion of incomplete idea units stored in student notes will be negatively associated with posttest achievement due to the lower external storage value of those notes

Participants, Method, and Procedure

- 100 undergraduate education and communication studies students
- 2 (note-taking medium: laptop vs. longhand) X 2 (distraction level: texting vs. no-texting) factorial design
- Texting manipulation
- 15 minute video lecture → review period → distractor task → posttest

Outcome Variables

- Total word count
- Total number of complete *and* incomplete idea units
  - Main topics
  - Supporting details
  - Examples
- Total images
- Posttest performance

Findings & Discussion: Note-Taking Outcomes

- Laptop users wrote more words in their notes than longhand note takers
  - Significant interaction between distraction level and note-taking method
  - Distracted laptop users and undistracted longhand note takers recorded similar word counts

- Laptop users and non-texters captured more text-based complete idea units than longhand note takers and texters
  - Main topics – Distraction level predicted
  - Complete supporting details – Distraction level and note-taking method predicted
  - Examples – Distraction level predicted

- No significant differences regarding partial idea units stored into notes
  - About 20% of all the idea units students attempted to capture in their notes were incomplete

Findings & Discussion: Posttest Performance

- Distraction-level emerged as the only meaningful predictor of posttest performance

- Note-taking method did not predict posttest performance
  - Still too early to declare one method superior to the other

- The number of complete idea units stored in notes predicted achievement

- The number of incomplete idea units stored in notes did not predict achievement

References available upon request.

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Appendix

Differences in Posttest Scores and Note-taking Outcomes Across Groups

	Distracted Laptop	Distracted Longhand	Undistracted Laptop	Undistracted Longhand
Total Posttest Score	22.12 (5.66)	21.88 (6.02)	24.32 (5.13)	24.84 (6.71)
Total Words	175.12 (58.88)	119.80 (36.69)	253.84 (73.67)	153.08 (51.91)
Total Complete Ideas	31.32 (7.66)	27.00 (5.53)	43.12 (10.76)	33.92 (10.81)
Complete Main Topics	16.84 (2.75)	16.04 (2.37)	19.68 (2.94)	17.88 (4.58)
Complete Details	12.08 (5.07)	9.04 (3.54)	19.48 (7.67)	12.76 (6.87)
Complete Examples	2.40 (1.68)	1.92 (1.80)	4.00 (1.98)	3.28 (2.46)
Total Incomplete Ideas	7.56 (4.76)	7.92 (4.21)	8.64 (3.01)	8.84 (5.86)
Incomplete Main Ideas	1.28 (1.34)	0.92 (1.08)	1.16 (0.94)	1.44 (2.45)
Incomplete Details	5.96 (3.96)	6.76 (3.59)	6.92 (3.17)	6.40 (3.86)
Incomplete Examples	0.32 (0.69)	0.24 (0.59)	0.56 (0.96)	0.56 (0.87)
Total Idea Units	38.88 (10.21)	34.92 (8.11)	51.80 (10.17)	42.32 (12.91)
% Complete	81%	77%	83%	80%
% Incomplete	19%	23%	17%	20%

Note. Values represent average total test scores and the average total number of each idea-type contained in participant notes. Standard deviations provided in parentheses.