The Correlation Between Students Accessing Guided Notes and Total Scores in an Agricultural Communications Course

Nellie Hill
Box 42131, 2810 15th St.
Lubbock, TX 79409-2131
806-742-2816
nellie.hill@ttu.edu

The Correlation Between Students Accessing Guided Notes and Total Scores in an Agricultural Communications Course

Introduction/ Need for Research

Lecture is the recognized as the most commonly utilized methods of instruction in higher education (Benjamin, 2002). "Note-taking is perhaps the most crucial skill used to assist students to understand and learn content during lectures" (Boyle & Rivera, 2012, p. 131). As critical as the skill of note taking is to lecture information recall, many postsecondary students report finding the task difficult (Rachal, Daigle, & Rachal, 2007).

Guided notes are intentionally incomplete lecture outlines the instructor provides to the students before the class session. The students may fill in the outline with key concepts, terminology, summaries, and questions as the information is presented during lecture (Stringfellow & Miller, 2005). Previous research has been positive, but not conclusive as to whether provision of guided notes results in increased academic performance (Cardetti, Khamsemanan, & Orgnero, 2010; Machida, Chin, & Johnson, 2018). Konrad, Joseph, and Eveleigh (2009) suggested that although studies concerning guided note taking have overall positive results, additional studies should be conducted across diverse populations, levels of schooling, and study areas.

The purpose of this study was to determine if there is a relationship between students accessing guided lecture notes and their total score in a non-major, agricultural communications course at [university].

Conceptual Framework

Working memory resources are in high demand while students are taking notes as they are multi-tasking, a complex cognitive task involving maintaining information in memory while also recording different information (Bui & Myerson, 2014; Bui, Myerson, & Hale, 2013; Engle, Tuholski, Laughlin, & Conway, 1999; Piolat, Olive, & Kellogg, 2005). In alignment with cognitive load theory, working memory resources are limited and should be prioritized to facilitate development of necessary schemas stored in long-term memory (Sweller, 1999). When working memory is full or overloaded, new information cannot be comprehended, so note-taking should reduce cognitive demand (Sweller, Van Merrienboer, & Paas, 1998).

Guided notes indicate to students when and where to record important information, in theory reducing cognitive load, leaving more space to process information presented in the lecture (Sweller & Chandler, 1991). Providing guided notes to students has been shown to improve note taking quality and academic performance (Austin, Carr, & Lee, 2004; Lazarus, 1993). The more frequently a student takes notes, and the higher the quality of those notes, the better the student's academic performance (Boyle, 1996; Hayati & Jalilifar, 2009; Hughes & Suritsky, 1994).

Methodology

If the instructor for the course in this study was leading the lecture, the guided notes were uploaded to Blackboard (learning management system) the day before class as a .doc file. This resulted in 24 guided notes provided to the students during the semester. Statistical tracking was turned on for these notes at the time they were uploaded to Blackboard, ensuring all student access to the file was recorded. Students were not required to access the guided notes provided. The guided notes file could be printed off and written in or opened electronically and typed into during class.

After the conclusion of the course, a statistical tracking report was run via Blackboard to show if each student accessed each guided notes file the day before or the day of the associated class session. The number of times a student accessed the notes was divided by 24, the total number of guided notes available, to reach percentage of instances the student accessed the guided notes. There were 1,000 total points available in the class, so the student's total points earned were divided by 1,000, then multiplied by 100 to arrive at the student's total score percentage. These two continuous variables were used to conduct a bivariate correlation analysis to assess if the percentage of instances a student accesses the guided notes covaries with the student's total score percentage in the course.

Results

The course had 94 students enrolled who on average accessed 7 (30.67%) of the 24 available guided notes. Student access to the guided notes ranged from zero, or no access, to 23 of the guided notes files (95.83%). The average total score percentage was 85.49%, with total scores ranging from 19.50% to 94.60% in the course.

Bivariate correlation analysis using Pearson's *r* revealed a significant, positive relationship between student ($N = 94$) total course score percentage and percentage of guided notes accessed throughout the semester, $r = .221$, $p = 0.032$. Davis (1971) classified this as a low level of correlation. A review of the data shows as guided notes access increases, so does the student's total course score.

Conclusions

Results indicated there is a relationship between students accessing guided lecture notes for a course and their total score in the course. However, results should be interpreted cautiously as Davis (1971) classified this correlation as low. Providing guided notes to students is one way instructors can help students achieve higher academic performance, should the student decide to utilize the resources provided.

Recommendations

Instructors are encouraged to provide guided notes to students in advance of class sessions as a means of lessening load on the working memory of students. This should assist the student in prioritizing working memory for interpreting key concepts and main topics, thus encouraging development of long-term memory and enhancing academic achievement. Guided notes are loosely defined as an outline of a lecture and come in various formats, so instructors should explore what format works best for them and their class.

Future research is needed to determine what extraneous variables might be affecting the correlation between students accessing guided lecture notes for a course and their total score in the course. In addition, a longitudinal study of providing guided notes to the same class over multiple semesters would provide additional insight into if the correlation holds across different student subgroups.

The results of this study are limited to those enrolled in the agricultural communications course under review. This study does not take into consideration other extraneous variables that might affect the relationship between students total scores and the number of times they accessed guided notes during the semester.

References

Austin, J. L., Lee, M., & Carr, J. P. (2004). The effects of guided notes on undergraduate students' recording of lecture content. *Journal of Instructional Psychology, 31*(4), 91-96.

Benjamin Jr., L. T. (2002). Lecturing. In S. F. Davis & W. Buskist (Eds.), *The teaching of psychology: Essays in honor of Wilbert J. McKeachie and Charles L. Brewer* (pp. 57-67). New York, NY: Taylor & Francis Group.

Boyle, J. R. (1996). Thinking while notetaking: Teaching college students to use strategic notetaking during lectures. In B. G. Brown (Ed.), *Innovative learning strategies: Twelfth yearbook* (pp. 9–18). Newark, DE: International Reading Association.

Boyle, J. R., & Rivera, T. Z. (2012). Note-taking techniques for students with disabilities: A systematic review of the research. *Learning Disability Quarterly, 35*(3), 131-143.

Bui, D. C., & Myerson, J. (2014). The role of working memory abilities in lecture notetaking. *Learning and Individual Differences, 33*, 12-22. doi:10.1016/j.lindif.2014.05.002

Bui, D. C., Myerson, J., & Hale, S. (2013). Note-taking with computers: Exploring alternative strategies for improved recall. *Journal of Educational Psychology, 105*(2), 299-309. doi:10.1037/a0030367

Cardetti, F., Khamsemanan, N. & Orgnero, M. C. (2010). Insights regarding the usefulness of partial notes in mathematics courses. *Journal of the Scholarship of Teaching and Learning 10*(1): 80-92.

Davis, J. A. (1971). *Elementary survey analysis*. Englewood Cliffs, NJ: Prentice-Hall.

Engle, R. W., Tuholski, S. W., Laughlin, J. E., & Conway, A. R. A. (1999). Working memory, short-term memory, and general fluid intelligence: A latent-variable approach. *Journal of Experimental Psychology: General, 128*(3), 309-331.

Hayati, A. M., & Jalilifar, A. (2009). The impact of note-taking strategies on listening comprehension of EFL learners. *English Language Teaching, 2*(1), 101-111.

Hughes, C. A., & Suritsky, S. K. (1994). Note-taking skills of university students with and without learning disabilities. *Journal of Learning Disabilities, 27*(1), 20-24.

Konrad, M., Joseph, L. M., & Eveleigh, E. (2009). A meta-analytic review of guided notes. *Education and Treatment of Children, 32*(3), 421-444.

Lazarus, B.D. (1993). Guided notes: Effects with secondary and post-secondary students with mild disabilities. *Education and Treatment of Children, 16*(3), 272-289.

Machida, K., Chin, M., & Johnson, K. A. (2018). The provision of partial notes is not associated with improved student attention in lectures or subsequent understanding of the lecture material. *Active Learning in Higher Education, 19*(2), 101-115.

Piolat, A., Olive, T., & Kellogg, R. T. (2005). Cognitive effort during note taking. *Applied Cognitive Psychology, 19*, 291-312. doi:10.1002/acp.1086

Rachal, K. C., Daigle, S., & Rachal, W. S. (2007). Learning problems reported by college students: Are they using learning strategies? *Journal of Instructional Psychology, 34*(4), 191-199.

Stringfellow, J. L., & Miller, S. P. (2005). Enhancing student performance in secondary classrooms while providing access to the general education curriculum using lecture formats. *TEACHING Exceptional Children Plus, 1*(6), 2-16.

Sweller, J. (1999). *Cognitive processes and instructional design in technical areas.* Victoria, Australia: Australian Council for Educational Research.

Sweller, J., & Chandler, P. (1991). Evidence for cognitive load theory. *Cognition and Instruction, 8*(4), 351-362.

Sweller, J., Van Merrienboer, J. J., & Paas, F. G. (1998). Cognitive architecture and instructional design. *Educational psychology review, 10*(3), 251-296.