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Information comprehension from longhand notes and slides in the language classroom

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Abstract: The aim of the study presented in this paper was to compare undergraduate students' information comprehension under conditions where they took notes in longhand during traditional lectures and lectures given through slides. A quasi-experimental approach was adopted to collect the data from 42 participants enrolled in a compulsory course at a state university in Turkey. During the first three weeks, the participants attended lectures presented by the lecturer using PowerPoint slides, while in the next three weeks the lectures were presented in a traditional format where the same lecturer presented the material verbally without using any slides. At the end of each lecture, a quiz was distributed to the participants. The mean scores from the quizzes indicated that when the participants took longhand notes while listening to traditional lectures, they performed better than when they just listened to these lectures and read the lecture notes on the slides.

1. Introduction

As Armbruster (2009: 220) points out, lecturing is still one of the primary instructional methods, especially among those teaching university students, so note taking remains an important tool in academic life. The findings of several studies indicate that taking notes facilitates comprehension, especially when learners are given time to review their notes (Boch, Piolat 2005; Bohay, Blakely, Tamplin, Radvansky 2011; Duran, Frederick 2013). With technological developments, note taking in longhand has almost been replaced by techniques such as note taking on electronic devices, reading someone else's notes, e.g. teachers' PowerPoint slides, or taking smartphone photos of these notes written on the board and/or slides.

Recent years have seen a keen interest in note taking in classrooms, leading researchers in the field to analyze various forms and aspects of note taking by students, such as longhand note taking and comparing it to note taking on electronic devices, information retention from presentations, and traditional lectures.

Erwin and Rieppi (1999), for example, compared the relative effectiveness of the use of multimedia materials and traditional lectures on students' success on mean final examination scores. The six instructors that volunteered to participate in the study led classes on human development, psychological statistics, and abnormal psychology. Each instructor taught each course under two experimental conditions, one using multimedia and the other in a traditional classroom. At the end of each course, the same final examination was given to students. Then, the mean final examination scores were compared. The results indicated that the scores of the students in the multimedia class and the traditional class differed significantly in all the courses. It was found that the multimedia class participants scored significantly higher in the final examination than the participants in the traditional classroom.

Susskind (2005) studied the effects of non-interactive computer assisted instruction (the use of PowerPoint presentations) on students' performance, motivation, and attitudes. The participants in his study were college students enrolled in an introductory psychology class.

traditional lectures than from PowerPoint sessions, adding a word of caution that when animation, graphics and figures are considered, using slides might have an advantage over traditional classes.

In another study carried out in a higher education institution, Duran and Frederick (2013) investigated seventy-two undergraduate students' information comprehension using different note taking conditions: taking notes on paper and by using laptops. The two groups worked on a 10-minute projected documentary, which was followed by an immediate comprehension test and a general information survey. The findings revealed that students taking notes on paper scored higher than those taking notes on electronic devices, suggesting that longhand note taking facilitated comprehension better than typing notes.

Another study conducted by Mueller and Oppenheimer (2014) pointed to differences in laptop and longhand note taking and provided the answer to the question of whether these two different conditions of note taking affect academic performance. The findings revealed that the longhand participants perform better in responses to the conceptual-application questions than the participants taking notes on laptops. Moreover, it was found that the longhand note taking allows individuals to process the information better than laptop note taking.

The studies comparing traditional and slide-enhanced classrooms lead to contradictory findings, some of which favor a traditional lecture style, whereas others emphasize a lecture format with PowerPoint presentations, indicating that further research is needed in this area.

2. The current study

The current study aimed to compare undergraduate students' information comprehension in two types of lectures: the one which involved longhand note taking and the other which relied on PowerPoint presentations.

2.1. Methodology

The participants of the study were 42 junior in-service English language teachers who were enrolled in the compulsory course Language Testing and Evaluation offered by the Department of Foreign Language Education at Mehmet Akif Ersoy University in Turkey. They were aged between 20 and 21 and selected using purposive sampling. Age and sex were not taken into consideration.

A quasi-experimental approach was adopted in the study to collect the data. During the first three weeks, lectures were presented using PowerPoint™ slides. The following figure (Figure 1) shows one of the slides as an example used in the lectures.

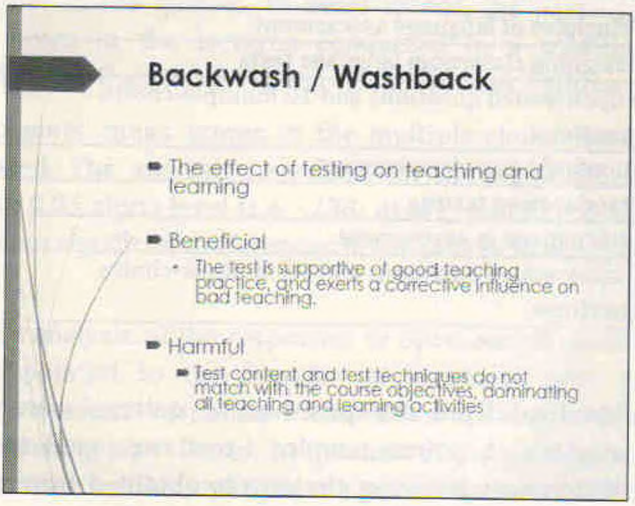

Figure 1: An example slide used in the lectures, presented in PowerPoint™

The slides were elaborated by the lecturer verbally. Before the lectures, the participants were informed that the slides would be shared as print-outs after the conducted classes. In the fourth week, a quiz was distributed to the participants and it included five open-ended questions and ten multiple-choice questions, each worth 2 points. The time allowed for solving the quiz was twenty minutes.

In the next three weeks, the classes were presented in a traditional format where the same lecturer discussed the material verbally without using any slides. He only used the board, on which he wrote key terms as well as drew basic figures and tables. The participants, in this case, were asked to take notes as they were informed that no material or slides would be shared with them. In the last week of the experiment, a quiz in the format similar to the previous one was given to the participants. The table below (Table 1) shows the topics covered each week before the quizzes were conducted with the participants.

Table 1: The topics covered before the quizzes.

Week	Topic
Week- I	Assessment concepts and issues
Week- II	Principles of language assessment
Week- III	Designing classroom language tests
Quiz I	5 open-ended questions and 10 multiple-choice questions
Week- IV	Standards-based assessment
Week- V	Standardized testing
Week- VI	Alternatives in assessment
Quiz II	5 open-ended questions and 10 multiple-choice questions

The data obtained from the post-lecture quizzes were subject to statistical analysis. A paired-samples t-test was used to determine significant differences between the scores obtained from the quizzes given in two different lecture styles.

2.2. Findings and discussion

The mean scores from the quizzes were carefully analyzed by the author of this paper. Results of this analysis are presented in the following table (Table 2).

Table 2: Overall mean statistics and differences in two conditions.

		M	N	SD	SEM
cond.	slide	22.90	42	7.792	1.202
	longhand	26.14	42	8.126	1.254

cond.	M	SD	SEM	t	df	Sig.
slide-longhand	-3.238	5.516	.851	-3.804	41	.000*

*p<0.01

M (Mean), N (Number of Participants), SD (Standard Deviation), SEM (Standard Error of Measurement), t (t-test value), df (Degrees of Freedom), Sig. (Significance), p (Significance Level)

The table indicates that the significance level was lower than 0.05 alpha level (t = -3.804; df=41; p=0.000) for the participants who took notes in longhand, which suggests that the participants taking longhand notes scored higher in the quizzes. In other words, the participants taking longhand notes in the lectures conducted in a traditional format performed better than those relying on the lecturer's slides.

The participants' mean scores in the multiple-choice questions were also analyzed. The analysis revealed that the significance level was higher than 0.05 alpha level (t = -.238; df=41; p=0.22). It suggests that there were no significant differences in the scores from multiple-choice questions.

The content analysis of the responses to open-ended questions in two conditions pointed to the benefits of longhand note taking. The longhand note takers' responses included few spelling mistakes and the intended meaning was clearer. In the case of the participants who just read the lecturer's slides and tried to respond to open-ended questions, the results were different. These participants tried to repeat what was written on the slides instead of using their own words.

The findings of this study indicate that when participants take longhand notes while listening to traditional lectures, they perform better than those who just listen to lectures and read notes on slides. This finding is in alignment with that of the study conducted by Savoy, Proctor and Salvendy (2009), who found that participants recall more information from traditional lectures delivered verbally than from PowerPoint sessions. This might be attributed to the fact that when learners take longhand notes, they try to focus more on the main points stated

verbally by their lecturer, and try to put what they understand into their own words, which might enhance their comprehension. Thus, it might be well stated that longhand notes enable participants to move beyond memorization of what is delivered by the lecturer.

Another important observation which needs to be made here relates to the time given to the participants for reviewing their notes. As the study conducted by Boch and Piolat (2005) indicates, taking longhand notes better facilitates comprehension as participants have more time to review their own notes. This finding is in alignment with that of Duran and Frederick (2013), who indicate that students taking notes on paper score higher than those who take notes on computers.

Moreover, regarding longhand notes, the current study seems to support the finding of Mueller and Oppenheimer (2014), who stress that longhand note taking may enable participants to process the given information better by selecting and reviewing important points in the lectures.

3. Conclusions and implications for practice

The results from the conducted study suggest that the participants taking longhand notes perform better than those who take notes from slides. Therefore, one may state that students should be encouraged to take notes rather than just rely on the teacher's slides. On the basis of these findings the following implications can be put forward:

1) At the very beginning of the term and during the first year of education, students should be provided with training on how to take notes through a variety of systems, such as Cornell Notes (see Pauk, Owens 2010, chapter 10 entitled 'Take Effective Notes') or Outlines. This can be done easily through a series of assignments.

2) If lectures are enhanced by using slides, these slides should be shared with students, preferably in advance, so that they can underline and take notes on important points.

3) Well-written pre-class quizzes on assigned readings for upcoming lectures can help students to decide what to focus

on. Accordingly, students can also be aware of which points/topics to concentrate on while listening to lectures and can take notes on these points/topics. It is also suggested that students be made aware that the scores obtained in quizzes will be considered when their overall success in the course is evaluated.

Bibliography

Amare, Nicole. 2006. To slideware or not to slideware: Students' experiences with PowerPoint vs. Lecture. *Journal of Technical Writing and Communication 36*/3, 297-308

Armbruster, Bonnie B. 2009. Taking notes from lectures. In: Rona F. Flippo, David C. Caverly (eds.), *Handbook of College Reading and Study Strategy Research* (2nd ed.). New York, NY: Routledge, 220-248.

Boch, Françoise, Annie Piolat. 2005. Note taking and learning: A summary of research. *The WAC Journal 16*, 101-113. wac.colostate.edu/journal/vol16/boch.pdf (date of access: 15th May 2014).

Bohay, Mark, Daniel P. Blakely, Andrea K. Tamplin, Gabriel A. Radvansky. 2011. Note taking, review, memory, and comprehension. *The American Journal of Psychology 124*, 63-73. http://www.jstor.org/stable/10.5406/amerjpsyc.124.1.0063 (date of access: 15th May 2014).

Duran, Karen S., Christina M. Frederick. 2013. Information comprehension: Handwritten vs. typed notes. *Undergraduate Research Journal for the Human Sciences 12*. https://www.kon.org/urc/v12/duran.html (date of access: 15th May 2014).

Erwin, T. Dary, Ricardo Rieppi. 1999. Comparing multimedia and traditional approaches in undergraduate psychology classes. *Teaching of Psychology* 26/1, 58-61. http://www.tandfonline.com/doi/pdf/10.1207/s15328023top2601_18 (date of access: 15th May 2014).

Mueller, Pam A., Daniel M. Oppenheimer. 2014. The pen is mightier than the keyboard: Advantages of longhand over laptop note taking. *Psychological Science* 25/6, 1159-1168. http://pss.sagepub.com/content/early/2014/04/22/0956797614524581.full.pdf+html (date of access: 15th May 2014).

Pauk, Walter, Ross J. Q. Owens. 2010. *How to Study in College* (10th ed.). Boston, MA: Wadsworth, Cengage Learning.

Savoy, April, Robert W. Proctor, Gavriel Salvendy. 2009. Information retention from PowerPoint™ and traditional lectures. *Computers and Education 52*, 858-867. https://www.researchgate.net/publication/229092122_Information_retention_from_PowerPointTM_and_traditional_lectures (date of access: 15th May 2014).

Susskind, Joshua E. 2005. PowerPoint's power in the classroom: Enhancing students' self-efficacy and attitudes. *Computers and Education 45*/2, 203-215. https://www.researchgate.net/publication/222565400_PowerPoint's_power_in_the_classroom_Enhancing_students'_self-efficacy_and_attitudes (date of access: 15th May 2014).

Appendix

Quiz given to the students

This quiz is composed of two sections. In the first section, there are ten short-answer questions, while the second section includes ten multiple-choice questions. Please read the questions carefully. For the questions in the first section provide brief and clear answers and write legibly. For the questions in the second section, circle the best answer.

SECTION I. Short-answer questions

1. Explain 'harmful washback'.

2. Explain the main aim of formative assessment conducted in language classrooms.

3. What is the basic difference between norm-referenced and criterion-referenced tests?

4. Briefly explain what 'reliability' is.

5. If a language teacher would like to test his/her students' writing skills directly, what should s/he do?

SECTION II. Multiple-choice questions

6. **Which of the following is true about assessment and teaching?**
   A) Assessment occurs at definite times.
   B) Tests are one of the forms of assessment.
   C) Assessment is always made by the teacher.
   D) Tests are either incidental or intended.
   E) Testing and assessment are the same.

7. **---- is based on the results of standardized tests or other exams that are administered under regulated or controlled test-taking conditions.**
   A) Informal assessment
   B) Formal assessment
   C) Formative assessment
   D) Alternative assessment
   E) Continuous assessment

8. **Final exams in a course are an example of ---- and ---- assessment.**
   A) formal / summative
   B) informal/formative
   C) formal/formative
   D) informal / summative
   E) summative / formative

9. **In ---- tests, language skills can be separated and each skill can be tested separately in a successful manner.**
   A) computer-based
   B) dictation
   C) communicative
   D) discrete-point
   E) integrative

10. **Which of the following is a disadvantage of computer-based testing?**
    A) Self-directed testing
    B) Administration
    C) Individualization
    D) Scoring
    E) Non-interactive performance

11. **---- aims to evaluate students in the process of forming their competencies and skills with the goal of helping them to continue that growth process.**
    A) Formal assessment
    B) Traditional assessment
    C) Standardized testing
    D) Formative assessment

E) Summative assessment

12. The real-life tasks compose the test tasks of the ---- tests.
A) standardized
B) discrete-point
C) norm-referenced
D) integrative
E) communicative

13. What lacks when the scorers give different scores to the same test?
A) Student-related reliability
B) Intra-rater reliability
C) Test reliability
D) Test administration reliability
E) Inter-rater reliability

14. If a test is designed to assess speaking ability and asks learners to write in the answers of multiple-choice questions, it may have ---- but lack ----.
A) authenticity / washback
B) reliability / validity
C) reliability / washback
D) practicality / reliability
E) validity / practicality

15. Which of the following is <u>not</u> necessary in order to increase the face validity of a test?
A) A familiar test format
B) Reasonable difficulty level
C) Different scoring instruments
D) Clear and concise directions
E) Adequate time limits