

THE EFFECT OF NOTE-TAKING ON UNIVERSITY STUDENTS' LISTENING COMPREHENSION OF LECTURES

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Abstract

The study investigated the effect of note-taking on comprehension of lectures by 44 undergraduate EFL students who are in the first year of their undergraduate level in the Department of Foreign Language Education in Middle East Technical University. The participants were divided into two groups, namely experimental and control groups. The experimental group practiced listening to lectures being allowed to take notes while the control group practiced listening to the same lectures without being allowed to take notes. The scores obtained by these two groups were statistically analyzed. The results showed that participants being allowed to take notes significantly did better than the those not allowed to take notes.

Keywords: *Listening comprehension, note-taking*

NOT ALMANIN, ÜNİVERSİTE ÖĞRENCİLERİNİN DERSLERİ ANLAMA ÜZERİNDEKİ ETKİSİ

Özet

Bu çalışma, not almanın Orta Doğu Teknik Üniversitesi'nde İngilizce Öğretmenliği bölümünde eğitim gören 44 lisans öğrencisinin dersleri anlamaları üzerindeki etkisini araştırmaktadır. Katılımcılar, kontrol ve deney gruplarına ayrılmıştır. Deney grubuna, not alarak alıştırma yapmışlardır. Kontrol grubunun not almasına izin verilmemiştir. İki grubun almış olduğu puanlar istatistiksel açıdan değerlendirilmiştir. Sonuçlar, not almalarına izin verilen grubun, not almalarına izin verilmeyen gruba göre istatistiksel açıdan daha başarılı olduğunu göstermiştir.

Anahtar Kelimeler: *Dinlediğini anlama, not alma*

1. Introduction

Listening is defined as the process of receiving an acoustic signal, which is then transformed into meaningful utterances. During this process, three types of knowledge are activated and these are situational knowledge, linguistic knowledge and background knowledge. The situational knowledge refers to the context of the discourse. A listener can see the person who is speaking and his/her bodily movements and this can provide clues for the listener to comprehend the discourse. Linguistic knowledge refers to listeners' comprehension of structures and vocabulary in utterances. Background knowledge of the listeners plays a role in comprehension of the utterances. The listener connects new information provided by the utterances with the knowledge they have possessed before. The result of this process is creating meaning and comprehending spoken language. To see whether the listener has created meaning and comprehended spoken language, some tests are designed and applied as listening tests. In these listening tests, listening abilities such as (1) comprehension of details/facts, (2) comprehension of vocabulary, (3) comprehension of main ideas and supporting ideas and (4) inferences about content and relationships are assessed. For instance, in the listening part of the TOEFL exam, examinees are given tasks that include mini-talk or lectures, by which their listening abilities are measured through academic, class related or campus related issues. The questions are asked of examinees after the mini-talk or the lecture ends. Besides, they are not allowed to take notes. This implies that examinees must be able to retain the whole text in memory without knowing what aspects might be relevant to the answer. In a real life situation, nobody keeps all the context of a lecture in memory without taking notes. They usually take notes so that they can remember the important points of the lecture later. The listening part in the TOEFL test shows that not only examinees' listening abilities but also their short-term memory ability is assessed. The main question that is asked in this study is to what extent this strategy is effective and whether note taking can facilitate the listeners' comprehension and retention of the content of the lecture in listening tasks. Heaton's (1990: 86) answer to this question is that examinees should be allowed to take notes and by this way, memory factor is minimized.

According to Dunkel (1988: 278), note taking is perceived by examinees as a strategy that facilitates remembering the lecture content. Among the researchers who support the idea that note taking is useful for the retention of the lecture content are Crawford (as cited in Dunkel, 1989: 261), Rickards, Fajen, Sullivan, and Gillespie (1997: 508) and Carrell, Dunkel and Mollaun (2002). However, some researchers such as Hale and Courtney (1994: 29) objected to that idea but they could not find support for their thesis.

As it is seen above, taking notes while listening to a lecture is widely accepted as a useful strategy for the retention of lecture contents in academic life. However, previous research with native speakers has presented mixed results regarding the facilitative effect of note taking in listening. After having considered the current literature,

the need and rationale for the study is straightforward: there is a significant need for empirical research that can re-examine the effects of note-taking with the context of non-native speakers of English. This study will investigate the effect of note taking in one of the listening tasks- lectures. The findings of this study could be used to help testers of listening comprehension to notice that note-taking may play an active role in students' performance.

2. Literature Review

Van Meter, Yokoi and Pressley (1994: 323) stated that most students took notes when listening to the lectures in universities and colleges. In their ethnographic interview study, they asked college students why they needed to take notes and asked what they achieved by this. The answers given by the students were as in the following: (1) it increases their attention to the lecture, (2) it increases their understanding of the lecture content and helps them retain this content later in their memory, (3) it provides connection between ideas (4) it informs the specific points repeated in a class. In their study, they also focused on the strategies that the students used while taking notes. They found that the students generally wrote down the key-words in the lectures, paid attention to the content on the board and to the main points and information that they were unfamiliar with. Benson (1989: 441) also did a piloting study and in his study he analyzed the process that an Arabic speaking student went through while listening to academic lecture at a U.S university. The result of the study presented that the student wrote simple sentences about the points that the instructor stated. These studies show that the students frequently use the note-taking strategy for different purposes while listening to lectures.

A number of studies have been conducted to present the effect of note-taking on the retention and recall of lecture information. One of the earliest studies was conducted by Crawford (as cited in Dunkel and Davey, 1989: 42). In the study, Crawford compared the achievement of native English speakers who took notes with those native speakers who did not take notes. As a result of the study, he stated that taking notes on a point did not guarantee its being recalled at the time of quiz, but failing to take note of it decreased greatly its chances of being recalled. Similarly, Rickards, Fajen and Sullivan (1997: 508) conducted a study on the effect of note taking among college students. They concluded that those who were allowed to take notes related to the organization or content of the lecture recalled nearly the whole lecture later. However, when they were not allowed to take notes, they did not remember the whole text.

Kiewra (as cited in Rickards, Fajen and Sullivan, 1997: 511) compared the performance of the students who took notes with those who did not take notes. Her findings showed that those who reviewed their notes performed higher than those who did not review the notes. However, he conducted 24 studies but in 8 of 24 studies, it was seen that there was no significant difference between those who reviewed and those who

did not. However, in her study she did not touch upon the possible reasons why two different results were found; but there might be some factors that affect the results. These factors might be memory or the level of proficiency of the participants.

In some studies, it was seen that note-taking did not facilitate examinees' performance. Hale and Courtney (1994: 29) found that allowing participants to take notes in TOEFL on lectures or mini talks had little effect on test performance. They added that the reason why the effect of note-taking was not seen might have been due to the questions asked in the listening part. TOEFL mini talks were followed by questions that tapped the general understanding of the passage. Students were not asked to remember very specific details, such as names and dates. They were asked about the main points of the passage and that such questions were answered correctly without a need for high-level discourse processing. As it is seen, their study focused on mini talks but they must have taken into consideration lecture tasks. In those tasks, examinees listened to 3 or 5-minute lectures on the topics which they were not interested in or on which they had no prior knowledge. They must have focused on lecture tasks and analyzed how note-taking affected examinees' performance in those tasks.

Similarly, Dunkel (as cited in Dunkel and Davey, 1989: 261) presented the effect of note-taking on ESL listener's comprehension of information in a 22 minute English mini-lecture and he found that there was no significant effect of note-taking on ESL listener's comprehension of information in the lecture. In addition, Dunkel pointed to 'memory effect' on performance; that is, listeners with an ability of high short-term memory accurately recalled the information in the lecture than those with low memory. Here, Dunkel also noticed that there was another factor that affected listeners' performances. It was stated that native speakers of English with better listening skills outperformed non-native speakers of English whose level was low in listening. However, in this study, Dunkel did not focus on how note-taking affected the performance of non-native speakers. However, in all the studies presented above, the following variables are missing: the effect of note taking, lecture length and topic. Carrell, Dunkel and Mollaun (2002: 9) investigated the variables above and added to them two other variables: listening comprehension proficiency and short-term memory. The effect of note taking was investigated in the context of two lectures, which were 2.5 and 5 minutes and whose topics were physical sciences and arts/humanities. Data were collected from 234 participants who spent an average of 56 months in studying English. The main results of that study were that a positive effect for allowing note taking was found, which not the case in the previous studies was; shorter lectures produced a higher percentage of correct scores than did longer lectures. Here, there was one striking point, which was the fact that the listeners performed best when they were allowed to take notes while listening to the lecture on arts and humanities when contrasted with those who were not allowed to take notes during the same lecture. When they listened to a lecture about psychical science, all of them failed whether they took notes or not. The listeners' background knowledge possibly affected that result but the study

did not handle this issue. In that study, they also focused on the correlations between short-term memory groups and found that there was no significant effect of short-term memory.

Research Questions

Three research questions were addressed in this study:

1. Is the comprehension of lectures affected if note-taking is allowed?
2. Does practice affect comprehension of lectures?
3. What are the views of participants about the effects of taking and using notes on listening comprehension of lectures?

3. Method

The study was designed as a quasi-experimental study since it did not include the use of random assignment. It focused on the effect of note-taking on students' listening comprehension. One class (experimental group) practised listening comprehension questions taking notes while the other class (control group) practised the same questions without taking notes. The sample consisted of 22 students in each group and the study lasted for 3 weeks and the instructor met the groups two hours every week.

Participants

44 Turkish EFL students were the participants of this study. The participants in the study were selected using purposive sampling. They were in the first year of their undergraduate level in the Department of Foreign Language Education in Middle East Technical University and were aged between 18 and 20. Most of them came from Anatolian Teachers Training High school where one-year English prep class was obligatory and some of the courses were taught in English. Age and sex were not taken into consideration.

Instruments

The pre/post test method was used for the study. Listening comprehension questions were developed from the book, *Longman Preparation Course for the TOEFL test: Skills and Strategies*, by Deborah Philips (1996). Pre and post tests consisted of four series of lectures followed by four to seven questions. The total number of questions was sixteen. Scores for both the pre and post tests were defined as the number of correct answers. A correct answer was rated 1 and incorrect answer 0. The survey questionnaire used was a modified version of the questionnaire used by Carrell, Dunkel, & Mollaun (2002: 63) (see Appendix A). There were nine statements in the questionnaire and the experimental group was asked to read each of the statements, indicate agreement or disagreement with the statement and circle the number (5, 4, 3, 2, or 1) that best described their opinion about the statement (a 5-point Likert scale for responses).

Pilot Study

Before administering the pre-test, two instructors in the ELT department were asked to comment on the items presented in the test in terms of clarity and content of the items. Later, the pre-test was given to twenty-two randomly selected students who were in the first year of their studies in the same department to see whether they were appropriate and would work as intended. Then, the questions were analysed using a test and item analysis program, *Test Checker and Item Analyzer* by Bermundo et al. According to the results, the reliability level was .94 considering Kuder-Richardson scale, which showed that this test could be used as a standardized test; however, two items were rejected and re-created and three items were revised.

Procedure

On the first day of class, an Informed Consent Form which was adapted from the sample consent forms given in *How to Design and Evaluate Research in Education* by Jack R. Fraenkel and Norman E. Wallen (2003: 86) was signed by the students agreeing to participate in the study. After students signed the form, the instructors administered the pre-test. With the results obtained from the test, and by means of an independent sample T-test, it was possible to establish whether or not there were significant differences between two groups of participants at the 0.05 alpha level (see Table 1).

Table 1. Pre-test results

	Group	N	M	SD	SEM	F	t	df	Sig.
PRETEST	experim	22	10,41	1,919	,409	,798	1,635	42	,110
	control	22	9,50	1,766	,377				

As can be seen, the significance level was higher than 0.05 ($t=1.635$; $df=42$; $p=0.110$), which lead to the conclusion that there were no significant differences between the two groups. Once this point became clear, the study was carried out with these two groups. During the three weeks, the experimental group practised listening comprehension tests taking notes while the control group practised the same questions without taking notes. On the last day of class, the instructor administered the post-test to both groups. Participants of the experimental groups were allowed to take notes while the participants of the control groups were not. Also, the experimental group was given a survey questionnaire to express their views about note taking in listening comprehension tests. The scores obtained by pre and post tests were statistically analyzed to see whether there was a statistically significant difference between these two groups and to see whether there was a practice effect.

Limitations of the study and further research

The study was carried out for 3 weeks and two hours for each week because of the time constraint and the availability of the participants.

As this study was carried out with two groups of undergraduate students of the Department of Foreign Language Education in the Middle East Technical University, it is suggested that similar experiments with a large number of subjects can be replicated taking into consideration the effects of topic, memory, and lecture length on listening comprehension.

4. Analysis and Results

The post-test scores obtained by experimental and control groups were analyzed using the SPSS software package using the independent sample T-test to establish whether there were significant differences between two groups of participants at the 0.05 alpha level (see Table 2).

Table 2. Post-Test Results

	Group	N	M	SD	SEM	F	t	df	Sig.
Post-test	experim	22	12,14	1,583	,337	1,190	2,508	42	,02*
	control	22	10,68	2,212	,472				

* $p < 0.01$

The analysis used to address the first research question (Is the comprehension of lectures affected if note-taking is allowed?) revealed significant effects for note taking. As can be seen, significance level was lower than 0.05 ($t=2.508$; $df=42$; $p=0.02$), which led to the conclusion that there was a difference between being allowed to take notes or not. In other words, when the experimental group was allowed to take notes, the students in this group performed significantly better than the participants in the control group who were not allowed to take notes. This may be due to the fact that listening comprehension tests also include memory testing if the examinees are not allowed to take notes, especially in longer talks or lectures as in our case since in real life situations especially in academic settings students are generally allowed to take notes while listening to a lecture. This result also supports the findings of Crawford (as cited in Dunkel, 1989: 261) and Rickards, Fajen and Sullivan (1997: 511).

The pre and post tests scores obtained by experimental and control groups were analysed again using the SPSS software package, though in this particular case using the paired sample T-test to establish whether there were significant differences within the groups themselves at the 0.05 alpha level (see Tables 3 and 4).

Table 3. Experimental group pre-and post-tests

Group	M	SD	SEM	t	df	Sig.
PRETEST-POSTTEST	-1,73	1,804	,385	-4,490	21	,000*

*p<0.01

Table 4. Control Group Pre-and Post Tests

Group	M	SD	SEM	t	df	Sig.
PRETEST-POSTTEST	-1,18	1,332	,284	-4,161	21	,000*

*p< 0.01

The analysis used to address the second research question (Does practice affect comprehension of lectures? also revealed significant effects for practice effect on listening comprehension. As can be seen from Tables 3 and 4, significance level was lower than 0.05 alpha level ($t=-4.490$; $df=21$; $p=0.000$) for the experimental group and ($t=-4.161$; $df=21$; $p=0.000$) for the control group, which lead to the conclusion that there is also practice effect on listening comprehension. The result is not surprising since each kind of a test requires practising the skills and strategies that the test itself includes.

To address the third research question (What are the views of participants about taking and using notes on listening comprehension tests?), descriptive statistics (frequencies) analysis was conducted (see Table 5). For analysis purposes, the “strongly agree” and “agree” categories were combined into “agree” and “strongly disagree” and “disagree” categories were combined to “disagree”.

Table 5. Findings of the questionnaire

QUESTION	Response	Freq.	Per cent
1	Neutral	7	31,8
	Agree	15	68,2
2	Neutral	6	27,3
	Agree	16	72,7
3	Agree	22	100
	Disagree	3	13,6
4	Neutral	9	40,9
	Agree	10	45,5
	Disagree	3	13,6
5	Neutral	3	13,6
	Agree	19	86,4
6	Agree	3	13,6
	Neutral	5	22,7
	Disagree	14	63,6
7	Disagree	1	4,5
	Agree	21	95,5
8	Disagree	6	27,3
	Neutral	8	36,4
	Agree	8	36,4
9	Disagree	2	9,1
	Neutral	9	40,9
	Agree	11	50,0

It is important to note that only the participants of the experimental group were given the questionnaire since they participated both in the note taking and non note-taking conditions. In this way, they had the opportunity to focus their responses on their experiences of note taking condition as opposed to their experiences in the non note taking condition.

Participants' responses suggest that they felt at ease if allowed to take notes while listening to lectures (100% agreed) and also 86.4 %believed that taking notes helped to understand the lectures. However, about half of the students (% 45, 5 agreement) stated that taking notes helped them to listen carefully to the lectures. However, 36% stated that they used their notes when answering the test questions and also 95% wanted more time to review their notes. This might be due to the limited time to answer the test questions. In addition, 68% agreed that they remembered enough of the lecture to answer the test questions without taking notes, which may be attributed to the fact that they can easily activate their background knowledge while listening to some lectures.

In sum, participants generally felt at ease if they were allowed to take notes during lecture listening and perceived a number of benefits from it since this was also reflected in their performance. This matches with the results of the study carried out by Van Meter, Yokoi and Pressley (1994: 335) and Benson (1989: 445).

5. Conclusion

Taking notes while listening to a lecture is a very common strategy and experience for the retention of information especially in academic settings. In this study, participants who were allowed to take notes had the opportunity to demonstrate their higher levels of performance without relying heavily on their memories to store all kinds of information heard in lectures. This is of great importance since most of the students are expected to take notes while listening to lectures in classrooms for future reference. It is noteworthy to state that the listening comprehension tests should allow note-taking rather than making students rely heavily on their memories, which, to some extent, results in relatively poor performance.

REFERENCES

1. Benson, M. J. (1989). The academic listening tasks: A case study. *TESOL Quarterly*,23, 421-449.
2. Bermundo, C. B., Dy, E. T., Ballester, R. C., & A. B. Bermundo. *Test Checker and Item Analyzer* (Version 2.0). [Computer Software]
3. Carrell, P. L., Dunkel, P. A., & Mollaun, P. (2002). *The effects of note taking, lecture length and topic on the listening component of TOEFL 2000*. Princeton, NJ: Educational Testing Service.
4. Dunkel, P. (1988). The content of L1 and L2 students' lecture notes and its relation to test performance. *TESOL Quarterly*, 22, 259-281.
5. Dunkel, P., & Davey, S.(1989). The heuristic of lecture notetaking: Perceptions of American and international student regarding the value and practice of notetaking. *English For Specific purposes*, 8,33-50.

6. Fraenkel, J. R., & Wallen, N. (2003). *How to design and evaluate research in education* (5th ed.). Boston: McGraw Hill.
7. Hale, G., & Courtney, R. (1994). The effect of note taking on listening comprehension in the Test of English as a Foreign Language. *Language Testing*, 11, 29-47.
8. Heaton, J. B. (1990). . New York: Writing English language tests New York: Longman.
9. Mendelsohn, D. (1998). Teaching listening. *Annual Review of Applied Linguistics*, 18, 81-101.
10. Morley, J. (2001). Aural comprehension instruction: Principles and Practices. In M. Celce-Murcia (Ed.), *Teaching English as a Second or foreign language* (3rd ed.), pp. 67-85. USA: Heinle & Heinle.
11. Nunan, D. (2002). Listening in language learning. In J. C. Richards and W. A. Renandya (Eds.), *Methodology in language teaching: An anthology of current practice*, pp. 238-241. USA: CUP.
12. Peterson, P. W. (2001). Skills and strategies for proficient listening. In M. Celce-Murcia (Ed.), *Teaching English as a Second or foreign language* (3rd ed.), pp. 87-100. USA: Heinle & Heinle.
13. Philips, D. (1996). *Longman preparation course for the TOEFL test: Skills and strategies*. N.Y. Longman.
14. Rickards, J. P., Fajen, B. R., Sullivan, J. F., & Gillespie, G. (1997). Signalling, note taking and field dependence-dependence in text comprehension and recall. *Journal of Educational Psychology*, 89 (3), 508-517.
15. Rost, M. (2001). Listening. In R. Carnter and D. Nunan (Eds.), *The Cambridge Guide to Teaching English to speakers of other languages*, pp. 7-13. CUP.
16. Van Meter, P., Yokoi, L., & Pressley, M. (1994). College students' theory of note-taking derived from their perceptions of notetaking. *Journal of Educational Psychology*, 86 (3), 323-338.

Appendix

Survey Questionnaire

Directions: We'd like to give you the opportunity to give your views about note taking in listening comprehension tests. Read each of the following statements and indicate your agreement or disagreement with the statement. Circle the number (5, 4, 3, 2, or 1) that best describes your opinion about the statement.

5= Agree strongly 4= Agree 3. Neutral 4= Disagree 1= Disagree strongly

1.	Taking notes helped me to answer the questions better than if I had not been able to take notes.	5	4	3	2	1
2.	Taking notes made it easier to remember the lecture information.	5	4	3	2	1
3.	I felt more at ease when I could take notes than when I could not.	5	4	3	2	1
4.	Taking notes helped me listen carefully to the lectures.	5	4	3	2	1
5.	Taking notes helped me to understand the lectures.	5	4	3	2	1
6.	Taking notes distracted me from paying close attention to the information in the lectures.	5	4	3	2	1
7.	I wanted more time to review my notes before answering the test questions.	5	4	3	2	1
8.	I used my notes when answering the test questions.	5	4	3	2	1
9.	I remembered enough of the lecture to answer the test questions without taking notes.	5	4	3	2	1