



## The Impact of Note-taking Strategies on Listening Comprehension of EFL Learners

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### Abstract

The main concern of the present study is to probe the relationship between note-taking strategy and students' listening comprehension (LC) ability. To conduct the study, a language proficiency test was administered to the undergraduate students majoring in English Translation at Shahid Chamran University of Ahvaz and sixty students were selected to enter into the next phase of the experiment. They were then randomly divided into three groups: uninstructed note-takers, Cornell note-takers, and non note-takers. Next, the three groups were asked to listen to the listening section of a simulated TOEFL proficiency test. The results, in general, supported a clear link between note-taking strategy and LC ability. An important finding of this study was that students who took notes according to their own method showed lower level of language achievement than those who took notes on the basis of the Cornell method.

**Keywords:** Note-taking, Listening comprehension, Learning strategy

### 1. Introduction

When you pack for college, you're not likely to forget your favorite clothes, music, and equipment; but if you're like the most students, you may forget the importance that memory skills play in your college career (Brown, 2000). For many freshmen, the prospect of attending first year university classes among literally hundreds of students in large lecture theatres can be very intimidating. Being accustomed to smaller classrooms and discussion grouping, high school students coming to university for the first time often have to develop new skills of listening, for example note-taking, and using notes as a cognitive learning strategy (For a detailed classification of learning strategies see Hismanoglu, 2000).

According to Ferris and Tagg (1996, cited in Kim, 2004) lack of note-taking skills and problems with note-taking as well as listening comprehension are troublesome areas most often reported by international students. Consequently, students' lack of comprehension may contribute to their silence in oral classroom discussion. It is critical for learners to master note-taking for school, work, and life in general. A good reason to take notes is that you can never re-listen to speech or a presentation. You must take every opportunity to record and keep information so you can use it later. A further problem that listeners often address is the rapid disappearance of the content of what they listen to. Many language learners claim that as they listen, they can follow the speakers with some ease, but when it comes to remembering it some time later, they find themselves behind eight balls. This is a serious problem that has to be taken into more consideration in studies on retention. One way to alleviate the problem is to expose learners to varied post listening activities of which note-taking is one.

Language educators have approached note-taking from different perspectives (Carrier, 2003; Fajardo, 1996; McKeating, 1981; Slotte & Lonka, 2003). Some researchers have found positive relationships between note-taking and learning. According to Hartley and Davies (1978, cited in Boon, 1989) out of 35 studies on the effects on note-taking, 17 studies

found that the note-takers performed better than the non-note-takers, 16 studies found no difference, 2 studies found that note-taking interfered with performance. Other studies indicate that note-taking has no effect on achievement. A few researchers have even found that taking notes has an adverse effect on student achievement (Hartley, 2002; Ornstein, 1994; Peck & Hannafin, 1983). The studies showing no difference or negative results were analyzed by Ladas (1980, cited in Boon, 1989) and serious methodological weaknesses were found in them. The negative results were obtained from lectures delivered at high speeds.

Gilbert (1989) observes how difficult it is to take notes from a lecture in a foreign language. Even in some cases, it is suggested that the students take notes in L1 while listening to L2 (Koren, 1997). In another instance, Wald (2006) moves one step ahead by suggesting learning through multimedia for those who find note-taking difficult.

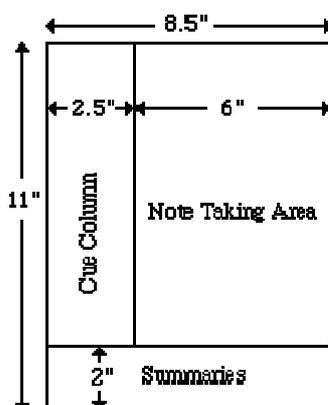
In their study, Titsworth and Kiewra (2004) pointed out that spoken organizational lecture cues boosted the number of noted organizational points and details by 39 and 35%. As another alternative result to their research, it was confirmed that note-taking resulted in about 13% higher test achievement than not taking notes.

Whether or not note-taking strategies have an effect on student achievement is still open to dispute. The results of the experimental studies on this issue are diametrically opposed on this case and yet many questions remain unanswered and the researchers have suggested that more research needs to be conducted on the topic to determine if teaching note-taking strategies can boost student achievement (Bretzing, Kulhavy, Caterino, 1987; Chen, 2007; Falout, 2002; Palmatier, 1971; Peck & Hannafin, 1983; Wilson, 2003).

A question that many scholars have wondered about focuses on why note-taking is rarely taught in high schools and universities? Since note-taking is a crucial skill, many educators believe that it should be explicitly taught in school (Bakunas & Holley, 2001; Eidson, 1984; Kiewra, 1987; Ornstein, 1994; Spire & Stone, 1989). According to Ornstein (1994), note-taking should be part of the curriculum. It is critical for learners to master note-taking for school, work, and life in general. A good reason to take notes is that you can never re-listen to speech or a presentation. You must take every opportunity to record and keep information so you can use it later. So with regard to the obstacles that many students experience which could easily be observed in the Iranian education system, the present study intends to investigate the effect(s) of note-taking instruction on the students' listening comprehension (LC) achievement.

Recent investigations into language learning behaviors have revealed that there are several methods of note-taking strategies, each of which is deployed for different purposes in acquiring the target language. Of different types of note-taking, i.e. the Sentence Method, Mind Mapping Method, The Formal Outline Procedure, Clustering, and the Cornell Method (CM), the last one was selected for the present study because of its more comprehensive and widely used format.

The CM was developed by Pauk (1974) to assist Cornell students in their lecture classes to improve the organization of their notes. This system provides a systematic method for recording and reviewing notes.



**Note Taking Area:** Record lecture as fully and as meaningfully as possible.

**Cue Column:** As you're taking notes, keep cue column empty. Soon after the lecture, reduce your notes to concise jottings as clues for Reciting, Reviewing, and Reflecting.

**Summaries:** Sum up each page of your notes in a sentence or two.

The method is great for those who are new to taking notes; the format makes it easy to pick out what the key words and concepts are so that the note-takers do not waste their time or energy studying irrelevant material.

## 2. Research questions

The present study will seek to answer the following questions:

1. Does instruction on note-taking strategies improve LC skill in academic situations?
2. Is there any significant relationship between the students' LC skill and their note-taking strategies?

### 3. Methodology

#### 3.1 Participants

The subjects who participated in this study consisted of sixty undergraduate students, majoring in English at Shahid Chamran University of Ahvaz, who had passed between three to seven courses in English. 73% of the participants were female and the rest were male, ranging from 20 to 24 years old. They were selected from a population of 110 undergraduate students by taking a simulated TOEFL proficiency test (Peterson, 2005). The test consisted of listening, grammar, vocabulary, and reading comprehension, 20 items for each.

#### 3.2 Instruments

The materials used in this study were composed of a tape-recorder, the TOEFL test, the Cornell Method pamphlet, an audio-taped listening comprehension test, an achievement test, and a post-test.

#### 3.3 Procedures

This study was conducted over the course of 6 weeks beginning with administration of a sample TOEFL test to select the intermediate level students. The assigned time for this test was 100 minutes. As a result, the researchers selected those students whose language proficiency scores were at most one standard deviation above or below the mean. Based on their scores, the subjects were called for the next phase of the study.

Then, the participants were randomly divided into three 20-student groups. The Non-note-takers group (NNTG) was considered as a group who took no notes during the two times play back of a part of TOEFL listening comprehension. The Uninstructed note-takers group (UNTG) took notes on their own usual manners during listening comprehension test. The Cornell note-takers group (CNTG) received the necessary instruction in form of "informal instruction" —that is the participants did not directly receive any instruction from the instructor within the class. But they were taught the Cornell note-taking system through a pamphlet. This was an instructional source to make them familiar with and practice the system prior to the post test. The pamphlet included notes and recommendations on paper size, taking down information in the six-inch area, writing in the left margins, and copying instructors' notes on the board. The pamphlet introduced the Cornell note-taking in five Rs: recording, reducing, reciting, reflecting, and reviewing. Along with the pamphlet, a series of comprehension tasks in form of audio-taped recording was designed for them to help them with the comprehension of points. The rationale for learning the Cornell method as how to utilize the note-taking system was explained in the pamphlet to students. Some directions were also given to the subjects in the pamphlet. All the three groups were given a chance to listen to the tape twice before answering the listening comprehension items.

Next, after an interval of a week, an achievement test-including 30 multiple choice items was used to assess the CNTG to check their knowledge about the Cornell system. (See appendix for sample MCQ format on Cornell system). After being assured that all 20 students had got a good command of Cornell method, a post-test was given to them. Then, like the other two groups, they listened to the same part of the TOEFL (2005) listening comprehension, and they took notes according to the instruction they had received. The post-test was roughly equivalent to the pre-test and also to the tasks used in the exercises which were presented to them in the form of audio-listening comprehension test. The reliability of this test calculated through KR21 for the NNTG, the UNTG, and the CNTG were 0.654, 0.681, and 0.72 respectively. There was an interval of five minutes after the first playback, for the participants, to review their notes and after the second playback they had to answer the questions.

### 4. Data analysis

After administering the post-test, according to the obtained data, the performance of the three sample groups was compared and contrasted by applying ANOVA and t-test to determine any significant differences. The results of the two tests are presented in the following table.

Insert Table 1 right about here

The results of the post-test are also shown in the following tables. The scores obtained from the post-test of each of the two groups were compared with each other by "matched t-test" to observe any significant effects on the performances of the subjects. Thus, table (2) displays the means obtained from the post-test of NNTG and UNTG.

Insert Table 2 right about here

Table (3) compares the means obtained from the post-test of NNTG and CNTG.

Insert Table 3 right about here

In order to examine whether the students who received instruction did better than those who took no notes, another t-test was applied. As shown in table (3) the t-value obtained from comparing the two means was equal to 2.53 and the t-critical at 0.05 level of significance was equal to 2.45, so we were justified in rejecting the null hypothesis.

Our two groups scored differently in the post-test in listening comprehension. The difference was then statistically significant, and this supported use of Cornell note-taking method in promoting the student's achievement test on listening comprehension.

Table (4) indicates the means obtained from the post-test of "UNTG" and "CNTG".

Insert Table 4 right about here

As shown in table (4) the t-value obtained from comparing the two means of NTG and CNTG was equal to 2.19 and the t-critical at 0.05 level of significance was equal to 2.07. Since the t-value exceeded the t-critical for 38 degrees of freedom, it was concluded that the difference in the performances of UNTG and CNTG was highly significant.

From the above calculations, it was realized that the participants who received instruction and benefited from the *Cornell note-taking strategy* scored higher in listening comprehension than those who received no instruction and took notes in their own usual manners.

## 5. Discussion

This study has examined the effect of Cornell note-taking strategy in listening comprehension students learning English as a foreign language. The central question of the study was whether there was any positive/negative relationship between the students' listening comprehension and their note-taking strategies.

The results of one-way ANOVA revealed that there were significant differences among the three groups; then the *non note-takers* and the *untrained note-takers* scores were carefully compared to find out if there was any significant difference between the (NNTG) and the (UNTG) groups.

Looking through tables 3 and 4, one notices that students who took no notes (NNTG) and those who took notes on their own usual manners (UNTG) showed lower levels of language gains than those who took notes on the basis of the Cornell note-taking method (CNTG). On the one hand, students often acknowledge the difficulty they experience in simultaneous listening and note taking. Some students contend that taking notes during a lecture hampers their listening comprehension. These students state that they are so busy writing down one point that they do not hear the others. They wonder if they would be better off just focusing on listening and not taking notes. On the other hand, in case of UNTG, it should be added that the reason for their low performance, in contrast with the CNTG group, is thought to have originated in some keys such as writing in sentences rather than in phrases, using full words instead of using the symbols and abbreviations, interfering with listening while note-taking, and the lack of concentration, comprehension, and retention. If one or more of these keys are missing, incomplete listening occurs and misunderstanding results.

However, trained note-takers yield significantly better performance than untrained note-takers because they are instructed, though informally, to take a more systematic step towards note-taking. Students often seem surprised when they have listened in class, everything they heard made sense, they took notes, and they still could not recall the information later on. It should not be surprising; most of what you hear in class stays only in short-term memory (STM) and then is lost.

Unless we actively take steps to remember, the mind is capable of retaining information for only relatively short periods of time. Studies show that, after hearing an important lecture, the average person is able to recall:

- 50 % after one day
- 35 % after one week
- 20 % after two weeks

Research suggests that people listen very badly. Students listening to lectures have been found to comprehend half or less than half the basic matter (Nicholas, 1988). In a more precise look, Rockler-Gladen (2007) gives at least two tentative reasons why so many students lack note-taking skills. Giving reference to one of her students' response, she mentions that probably one of the reasons is that students' so-called notes have not been looked at before, or even worse than that, they have not been instructed on how to take notes properly. At this stage, therefore, we think that the fault goes to the curriculum designers in general and the relevant teachers (especially in Essay Writing courses) in particular. To compromise with Rockler-Gladen's words, the second reason goes to the fact that in the present world of speed, technology is moving in a non-stop fashion and thus is overused by specialists to present information to students. As an example, the card memories in the cell phones do not give enough opportunity to mobile users to keep some simple numbers in their mind. Sticking to Power-Point slides, and other high-tech organizational tools, has made the students ill-equipped to take notes in a more traditional environment. Of course, this is not to deny the effective/positive role of technology in the area of learning and teaching but to emphasize that it has to be utilized properly.

## 6. Conclusion

As a result of the present study, we suggest that students should be taught the useful techniques of note-taking (such as the one tested in the present study) with a number of lecture topics. Although the Cornell note-taking technique at first

may seem cumbersome, it is possible that once students master this technique they could then be taught to fade out the use of the forms and incorporate only the written prompts during note taking (Weishaar & Boyle, 1999). Another important finding of this research is that teaching the Cornell note-taking strategy to university students can help improve students' achievement. In this way, the students will get the most benefit from learning note-taking strategies, if those strategies are practiced over the course of several months, even a full semester.

Specifically speaking, the results of this investigation might have implications for EFL teaching, testing and research programs. Based on the finding of this study, the teachers are recommended to include note-taking materials as part of their instruction to help students learn more about the subject matter under instruction (Boch & Piolat, 2005).

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### Appendix: Achievement Test on Cornell Note-taking Method

1. The symbol "<" is used for

- a) more than or grater than
- b) rather than
- c) numerical order
- d) less than or fewer than

2. If a point is very confusing and needs to be clarified, you will use the symbol .....

- a) ?
- b) ??
- c) \*
- d) @

3. "Positive/negative/degree/at and each" is symbolized as

- a) + / - / ° / @
- b) + / < / ≈ / &
- c) + / - / × / @
- d) > / < / ° / et

4. In order to show that one idea results from or causes another, we will use the symbol .....

- a) colons :
- b) arrows →
- c) colons or arrows (: or →)
- d) change Δ

5. If you hear some thing that sounds like the main idea for the lecture, you have to

- a) draw an arrow from one to the other.
- b) draw a big question mark in the column.
- c) put a big exclamation point.
- d) draw a box around it with a big star at the left.

6. In Cornell note-taking system we draw an arrow → from one to the other .....

- a) to show a connection between two points
- b) to show the main ideas of the lecture
- c) to replace words
- d) a and c

7. “Of./eg/no/i.e/nb etc.” belong to:
- common abbreviations
  - personal abbreviations
  - discipline-specific abbreviations
  - acronym abbreviations
8. .... is related to discipline-specific abbreviations?
- diff = different
  - gov = government
  - etc. = etcetra
  - au = gold
9. An acronym is an abbreviation which is pronounced as a .....
- phrase
  - word
  - clause
  - letter
10. Which symbol is applied for “namely”?
- viz.
  - c.
  - i.e.
  - cf.
11. The symbol “»” is used for “.....”
- is related to
  - will be
  - as a result of
  - increased
12. Which of the following symbol does not match its equivalence?
- ! important point
  - xx will be on exam
  - x I disagree
  - ?? approximately
13. The symbol ..... is used for “compare”.
- $\Delta$
  - cf
  - $\downarrow$
  - $\uparrow$

14. .... is a symbol which comes for “changed”.
- a)  $\Delta$
  - b) ff
  - c)  $\rightarrow$
  - d)  $\infty$
15. We use the symbol ..... for “definition” and the symbol ..... for the function.
- a) def / fun
  - b) def / fxn
  - c) defn / fan
  - d) dfn / fnc
16. C/B is a symbol which stands for .....
- a) at
  - b) could be
  - c) should be
  - d) before
17. Which of the following symbols corresponds to its equivalence?
- a) input = inp.
  - b) reaction = rxn
  - c) function = fxn
  - d) a, b and c
18. In short abbreviations, we utilize ..... of a word.
- a) a, b and c
  - b) the first three letters
  - c) the first syllable
  - d) the first syllable as well as the second letter
19. The words “different, government and necessary” can be shortened to
- a) dif – gov – nec
  - b) diff – gov – nec
  - c) diff – gov – nec
  - d) dif – gov – nec
20. In chemistry we represent ..... for gold and .....for magnesium.
- a) Gld – Mgs
  - b) Au – Mg
  - c) Au – Mag
  - d) Au – Mgs

21. The symbol w/i stands for .....
- will be
  - within
  - without
  - wish
22. To highlight important points you should use .....
- asterisk
  - underlining
  - exclamation points
  - a, b and c
23. Mathematical symbols can be used to show comparison between two things, so ..... is used to indicate .....
- = / equivalence
  - > / less than or fewer than
  - ↓ / increase
  - ... / etc
24. The noun phrase of “Light Amplification by Simulation Emission of Radiation” can be abbreviated to
- LASER
  - LAZER
  - LAISER
  - LEISER
25. The symbol ..... does not match its equivalence.
- viz = namely
  - NB = note
  - c = compare
  - re = with reference to
26. The items such as “decrease, will be on exam and following” can be abbreviated to:
- De - \* - Fol
  - ↓ - \*\* - ff
  - ↑ - ! - →
  - - !! - :
27. We use colons
- to show that one idea results from or causes another
  - to replace words such as “leads to” “becomes” or “follows”
  - to group information that belongs together
  - a and b

28. To group information that belongs together, we use the symbols .....

- a) a, b and c
- b) parenthesis ( ) and brackets [ ]
- c) brackets [ ] and circles o
- d) colons :

29. The symbol “×” is used for .....

- a) I disagree
- b) multiplied by
- c) maximum
- d) closed

30. Which symbol is used for “therefore” and “with reference to”?

- a) .. / re.
- b) the / wrt
- c) ≃ / ref
- d) ... / re

**Answer key**

- 1. d    7. a    13. b    19. c    25. c
- 2. b    8. d    14. a    20. b    26. b
- 3. a    9. b    15. b    21. b    27. d
- 4. c    10. a    16. b    22. d    28. a
- 5. d    11. c    17. d    23. a    29. a
- 6. a    12. d    18. a    24. a    30. c

Table 1. One-way ANOVA for the subjects' performances on the post-test

Source of variance	SS	DF	MS	F <sub>ratio</sub>	F <sub>critical</sub>
Between groups	207.7	2	103.85	4.21	3.17
Within groups	1405	57	24.65		
Total	1612.7	59			

MS = Means Squares

SS = Sum of Squares

Table 2. The performances of the NNTG and UNTG

Groups	N	Mean	SD	SD.E	DF	t-value	t-critical	Sig(2-tailed)
NNTG	0	20.75	5.25	1.17	8	0.686	2.042	0.497
UNTG	0	21.75	3.86	0.864				

Note: p<0.05

N = Number

SD = Standard Deviation

SD.E = Std.error mean

Table 3. The post-test performances of the NNTG and CNTG

Groups	N	Mean	SD	SD.E	DF	t-value	t-critical	Sig(2-tailed)
NNTG	20	20.75	5.25	1.17	38	2.53	2.45	0.16
CNTG	20	21.75	5.6	1.25				

Note:  $p < 0.05$       N = Number      SD = Standard Deviation      SD.E = Std.error mean

Table 4. The post-test performances of the UNTG and CNTG

Groups	N	Mean	SD	SD.E	DF	t-value	t-critical	Sig(2-tailed)
UNTG	20	21.75	3.8	0.864	38	2.19	2.07	0.034
CNTG	20	25.1	5.6	1.25				

Note:  $p < 0.05$       N = Number      SD = Standard Deviation      SD.E = Std.error mean