

A Study on Note Taking in EFL Listening Instruction

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This paper presents the results of a study on note taking in a university-level English language class. The students who participated in the study ($N = 21$) learned various note-taking techniques and had a number of opportunities to practice them in class. In order to examine the effectiveness of this training, students' notes for the listening sections of midterm and final exams were analyzed. Additionally, to gauge students' reactions to the training, a questionnaire was conducted at the end of the course. Overall, results showed that the students made steady progress in their note-taking skills and felt that their skills had improved.

本稿は大学の英語授業におけるノートテイキング指導に関する研究結果を報告する。参加した学生($N = 21$)は授業の中でノートテイキングの方法等について学び、練習を重ねた。学習の効果を調べるために、リスニング試験の際にとったノートを分析し、また、学生のノートテイキングに関する考えや意見を問うために、期末にアンケートを行った。データを分析した結果、学生はノートテイキング・スキルを着実に伸ばし、自分でその伸びを実感できたということが明らかになった。

NOTE TAKING is an important academic skill. According to van der Meer (2012), “note taking in lectures is often taken to be the distinguishing characteristic of learning at university” (p. 13). In L1 contexts, there have been a number of different studies on various aspects of note taking, such as the effectiveness of specific methods and techniques, as well as the connections between note taking and test performance. Despite the fact that note taking is an equally important skill for L2 learners who aim to use English for academic purposes, to date there has been relatively little research in L2 contexts. The purpose of this paper is to contribute to filling this gap by reporting the results of a study on the development of Japanese EFL learners' note-taking skills.

Previous Research

Research on note taking in L1 contexts has a long history. Ninety years ago, Crawford (1925) reported the results of a study conducted at a university in the United States in which positive correlations were found between the degree to which students were able to take down important points in their notes and quiz scores. He also found clear and well-organized notes correlated with better test performance. The importance of organization was confirmed by Kierwa, Benton, Kim, Risch, and Christensen (1995), who found that a flexible outline format that is adaptable to changes in lecture

format led to better results on a delayed recall test than notes taken in a conventional format or using a matrix. Nevertheless, Kierwa et al. also stressed that students need help learning how to take effective notes, writing that “students left to their own devices are terribly incomplete note takers” (p. 173). Positive effects of intervention were also found in a meta-analytic review of 33 studies on note taking (Kobayashi, 2006), although the effects were reported as modest. Kobayashi also found that providing a framework of the lecture to students was more effective than training or verbal instruction.

Although the amount of research in L2 contexts is significantly less than in L1 contexts, some important findings have been reported. In an early study that included both L1 and L2 university students, Dunkel (1988) found that test performance was positively correlated with the quality of the students’ notes rather than the quantity, and this applied to both groups of students. In other words, those students who were able to note down the key points in an efficient manner without too much extraneous information were the ones who performed best on the test. Clerehan (1995) also examined notes taken by both L1 and L2 learners in New Zealand and found that the L2 learners were “at a huge disadvantage” (p. 145). The main reason for this was that many of these students failed to write down key elements of the lecture, in particular those that were either level 1 or level 2 ideas in the hierarchical structure of the lecture. In another important study, rather than comparing L1 and L2 students, Tsai and Wu (2010) examined whether it was more beneficial for L2 students to take notes in their L1 (Chinese) or in their L2 (English) and whether note-taking training is beneficial. They found that students who took notes in English performed better than those who took notes in Chinese and also that the training had positive effects.

In perhaps the most comprehensive study to date in an L2 context, Carrell (2007) examined from several perspectives the note-taking practices of 216 international students studying at several different universities in the United States. In the ETS-funded study, students were divided into experimental and control groups, and

the students in the experimental group completed a six-page worksheet entitled “Good Practices in Notetaking” that served as the instructional intervention. The main instrument in the study was a computer-based listening test (pretest and posttest). The notes that students took while completing these tests were examined for eight different features that were selected after “an extensive review of the relevant literature on notetaking strategies relevant to second language listening comprehension test performance” (Carrell, 2007, p. 11). The results revealed that six out of the eight features were used more frequently in the posttest, although somewhat surprisingly this applied to both the experimental and control groups, negating any potential effects from the training. The six features that showed increased use were total notations, content words, abbreviations (including symbols and paraphrases), test answers, arrows, and highlighting (circles, boxes, and underlining). The study also included a pretest and posttest questionnaire that queried students about their perceptions of their own note-taking practices, including how frequently they made use of the features noted above and whether or not they thought that they were helpful. The majority of the features were rated as being used frequently and being helpful, with the exception of arrows and highlighting.

In her conclusion, Carrell (2007) attributed the lack of effect of the intervention to the fact that it was brief, and that many students may already have had their own well-established note-taking techniques. She stated that teachers need to take into account that both listening proficiency and note-taking proficiency are keys to student success, and that they “might do well to provide lots of practice so that students get used to taking notes to increase their ability to write and listen at the same time” (p. 45). From the perspective of an EFL environment such as Japan where many students will be formally introduced to lecture note taking for the first time at university, Carrell’s statements, with the exception of the one about well-established note-taking techniques, ring true. Brief interventions are unlikely to produce positive results, and clearly a great deal of practice is likely required. Due to the differences between

her subjects and most EFL learners, as well as differences in the environments, Carrell's study may not have any immediate implications for EFL contexts, but her research methods have laid the groundwork for some useful research that could be conducted and could shed light on the effects of intervention and practice with note taking. Accordingly, the purpose of this study was to examine whether training in note-taking techniques and ample opportunities to practice them in an academic listening course have an impact on Japanese EFL learners' note-taking practices, as well as to examine students' perceptions of the training and practice and its impact on their skill development. Two research questions were set:

1. Over the course of two semesters of training and practice, do Japanese EFL learners' note-taking abilities improve with regard to the total number of (a) notations, (b) content words, (c) abbreviations, (d) arrows, and (e) highlights?
2. Did students have experience with note taking prior to taking the course, and what perceptions do they have of their experiences with note taking in the course?

Method

Participants

Twenty-one 1st-year university students participated in the study. They were all enrolled in a yearlong course entitled Academic Listening Strategies I, taught by the author, at a medium-size university in the Kanto area. They were all non-English majors, and their TOEIC scores, used for class placement, ranged from 585 to 635. For two reasons, no control group was included in the study. First, note-taking instruction is an integral part of the curriculum, so it is unrealistic and unfair to not teach this skill to a group of students taking the same course. Second, even if this were ignored, the author did not teach a group of students at a similar level, making it difficult to control for teacher and level variables that could have a significant impact on the results (see Porte, 2002).

Materials

For the Course

The course employed an academic listening and speaking textbook entitled *Open Forum 2* (Blackwell & Naber, 2006). The book contains a number of different listening passages on academic or semi-academic topics as well as various types of speaking activities that focus on the same topics as the listening passages. All 12 units in the book were completed; approximately 2 to 3 weeks were spent on each unit. Because there is no explicit training related to note taking in the book, materials for teaching note taking were either created by the author or adapted from other sources.

For the Study

The students' notes that were used for analysis for RQ1 came from three tests given during the academic year. From the spring semester, a mid-term and final exam were used, and from the fall semester, only a final exam. These notes were taken by the students as they listened to the test passages and ranged from one to two pages of handwritten text per student per test. The topics of the passages were urban vs. suburban life, public art, and English as an International Language.

For RQ2, a questionnaire containing 27 items was distributed at the end of the year. The questionnaire contained items that queried students about their previous experience with note taking, as well as their impressions of various aspects of the course.

Procedures

During the Course

Students received training on how to take notes efficiently by making use of such things as abbreviations and symbols and by focusing on content words as opposed to function words. They were also

taught how to highlight important information as well as how to indicate relationships between ideas by using such things as arrows and indentation. Finally, training was given on the Cornell Method of note taking (Pauk, 1974), in which students divided the page into three sections: main ideas, supporting details, and summary. Sample notes using this method were provided, and students also had opportunities to compare their notes with those of other students. The majority of the training was conducted in the early part of the spring semester, as all of the techniques were thought to be crucial for helping the students to take notes successfully as they progressed through the textbook. However, throughout the year, students' notes were checked, and if any problems appeared, suggestions, further training, or both were provided.

For the Study

The procedure for the three exams that provided the data for RQ1 was as follows. Each exam consisted of one listening passage. Students listened to the passage two times and were able to take notes both times. They were not able to look at any comprehension questions as they listened. Rather, after the passage was played two times, they were given a separate paper with questions and used their notes to answer them. The passages in the first two exams were approximately 5 minutes long, and the passage in the third and final exam was approximately 6 minutes long.

All notations included in the students' notes were input into a spreadsheet, including abbreviations, symbols, words in Japanese, and punctuation (except for commas, periods, semi-colons and quotation marks). Words were input using the same spelling that the students had used, even if it was incorrect. As the data were being input into the spreadsheet, tags were used in separate columns so that the number of each feature under consideration in the study could be counted (e.g., abbreviations, symbols).

Results

RQ1

There were a total of 11,226 notations from the three tests administered during the year. Using the spreadsheet, the number of notations, content words, abbreviations, arrows, and highlights were counted for each student, and the average number of each of these features was calculated for each test administration so that longitudinal comparisons could be made. Table 1 provides the descriptive statistics that resulted from this analysis. As was noted above, the passage for the fall final exam was approximately 15% longer than the passages used in the previous two tests, so the figures were adjusted accordingly so as not to skew the results.

Table 1. Descriptive Statistics on Note Taking (N = 21)

Feature	Spring midterm Mean 1 (M1)	Spring final Mean 2 (M2)	Fall final Mean 3 (M3)	Raw gain after 1 year (% gain)
Total notations	110.9	176.1	208.0	97.1 (88%)
Content words	69.7	118.7	133.5	63.8 (91%)
Abbreviations	10.0	18.2	30.5	20.5 (205%)
Arrows	4.0	9.0	7.5	3.5 (88%)
Highlights	6.5	9.5	6.4	-0.1 (-1.5%)

In order to determine if the gains found were statistically significant, five repeated-measures ANOVAs were performed on the data in Table 1. The alpha level was set at .05, adjusted to .01 for multiple comparisons. The Tukey HSD test was used for post-hoc pairwise comparisons. Effect sizes were measured via partial η^2 . Table 2 presents the results of this analysis.

Table 2. Results of Repeated-Measures ANOVAs and Tukey HSD

Feature	<i>F</i> value	<i>P</i> value Partial eta ²	Tukey HSD M1 vs. M2	Tukey HSD M2 vs. M3	Tukey HSD M1 vs. M3
Total notations	$F(2,40) = 109.3$	$p < .0001$ 0.84	$p < .01^{**}$	$p < .01^{**}$	$p < .01^{**}$
Content words	$F(2,40) = 132.9$	$p < .0001$ 0.87	$p < .01^{**}$	$p < .01^{**}$	$p < .01^{**}$
Abbreviations	$F(2,40) = 18.9$	$p < .0001$ 0.49	$p < .05$ NS	$p < .01^{**}$	$p < .01^{**}$
Arrows	$F(2,40) = 15.9$	$p < .001$ 0.42	$p < .01^{**}$	NS	$p < .01^{**}$
Highlights	$F(2,40) = 3.5$	$p = 0.04$ NS 0.15	NS	NS	NS

Note. ** = significant; NS = nonsignificant ($p > .05$, adjusted to $p > .01$ for multiple comparisons).

RQ2

Fifteen out of 21 students responded to the questionnaire, making for a response rate of 71%. Tables 3-5 present the results of the items relevant to this study. The tables are divided by response type, and the original item numbers from the questionnaire have been maintained. For the first three items, responses were *Yes* or *No*.

Table 3. Questionnaire: Previous Experience With Note Taking ($N = 15$)

Item	Yes	No
1. Before taking this class, I learned how to do note taking in another English class.	2	13
2. I learned how to take notes in Japanese in high school or at university.	5	10
3. I learned about the Cornell Method of note taking for the first time in this class.	14	1

For items 4-15, students rated each statement using the following 5-point scale: 5 = strongly agree; 4 = somewhat agree; 3 = neutral; 2 = somewhat disagree; 1 = strongly disagree. The average (*M*) response for each item is provided in the tables.

Table 4. Questionnaire: Note Taking Done in Class ($N = 15$)

Item	<i>M</i>
Note taking done in class	
4. I improved my note-taking skills in this class.	4.3
5. The note taking I did in this class was difficult.	3.5
6. I became more comfortable with note taking after practicing in this class.	4.4
7. The speed of listening passages sometimes made it difficult to take notes.	3.3

Item	M
Note taking in general	
8. I think that taking notes makes me concentrate more on listening.	3.8
9. I think that note taking is an important academic skill.	4.4
10. In this class, I would have preferred to look at the comprehension questions in the textbook while I listened rather than take notes.	2.7
11. I usually take notes in the lecture classes that I take at university.	3.5
The Cornell Method	
12. At first, the Cornell Method was difficult to use.	3.8
13. I think that the Cornell Method is useful.	3.5
14. The Cornell Method made it easier for me to organize my notes.	3.6
15. I got better at using the Cornell Method in this class as I practiced more.	3.8

Note. Items were rated from 1 (strongly disagree) to 5 (strongly agree).

For items 21-27, students rated various note-taking techniques in terms of how frequently they thought they used them, and how helpful they found them to be. The rating scales were as follows:

Frequency of use	Helpfulness
5 = very frequently	5 = very helpful
4 = frequently, a lot of the time	4 = helpful
3 = sometimes, about half the time	3 = neither helpful nor unhelpful
2 = not frequently, only occasionally	2 = not helpful
1 = very infrequently, rarely, or never	1 = very unhelpful

Table 5. Questionnaire: Frequency of Use and Helpfulness of Note-Taking Techniques (N = 15)

Technique	Frequency (M)	Helpfulness (M)
21. Using abbreviations for some words (information → info, etc.)	3.2	3.8
22. Using shorter or easier words than the lecturer used (excellent → good, etc.)	4.3	4.4
23. Using special symbols for some words (number → #, etc.)	3.3	3.9
24. Using diagrams or pictures	2.5	3.7
25. Writing down content words (nouns, verbs, etc.) and not writing down function words (of, to, the, a, etc.)	3.4	3.9
26. Using arrows	3.9	4.2
27. Using ways to highlight particularly important information (circles, underlining, etc.)	3.8	4.2

Note. Items were rated for frequency from 1 (very infrequently, rarely, or never) to 5 (very frequently) and for helpfulness from 1 (very unhelpful) to 5 (very helpful),

Finally, at the end of the questionnaire a space was provided for free responses. Three students wrote comments. These responses are given verbatim in Table 6.

Table 6. Student Comments in Free Response Section of Questionnaire (N = 3)

Student	Comment
1	I thought that I'm not good at note taking, so I didn't like it before. But I found note taking is useful and help me to understand the lecture, and I tried to improve my note-taking techniques. I got used to taking notes! But I'll practice it more.
2	I feel my listening skill improved. Maybe!! Thank you so much.
3	I'm not good at listening before I take this class, but now I'm better at listening. By note taking, I improved not only ability of listening but also writing!

Discussion

RQ1

For four out of the five note-taking features examined in the study, statistically significant gains were found over the course of the year (see Tables 1 and 2). The total number of notations, content words, abbreviations, and arrows all increased significantly, and the effect sizes were moderate to strong. This suggests that the effects of training and practice were positive for most of the students, and that students made progress with a skill that can be challenging. Although the lack of a control group does not make it possible to state strongly that the results are due to the intervention, comparisons with the data obtained in Carrell (2007) suggest a good case for a positive effect. The percentage gains for the features found in her study ranged between 13% and 44% for the experimental group, and 11.9% to 12.2% for the control group. In contrast, in this study the percentage gains ranged from 88% to 205% (excluding highlighting, for which no gains were found). Although control group data would

certainly strengthen the argument, it seems reasonable that gains such as these are unlikely to have been found in a control group, had one been included.

RQ2

The results of the questionnaire revealed some interesting information about the students' experiences with note taking and their perceptions of it. First, only two out of 15 respondents had instruction on note taking in English prior to taking the course, although for taking notes in Japanese the number was higher at five (see Table 3). As for the Cornell Method, only one student had any experience with it before taking the course. These results are perhaps not unexpected, although it is a little surprising that only a third of the students had any note-taking instruction in their L1. With regard to perceptions of the note taking and training done in the class, most students appear to have felt that their skills improved (see Table 4, items 4 and 6) and that note taking itself was not overly difficult (items 5 and 7). This is encouraging news for teachers. It is also interesting to note that the students appeared to understand the importance of note taking in academia (item 9) although somewhat surprising that for many students this does not seem to convert to actual practice, as it appears that not all students take notes regularly in their lecture courses at university (item 11). Students seemed to find the Cornell Method useful, but there appears to be no strong vote for or against it. Finally, regarding note-taking techniques, with the exception of diagrams or pictures (see Table 5, item 24), the majority of students appear to use the techniques with at least some frequency and to find them reasonably helpful. However, it is interesting that were some discrepancies between the results for RQ1 and RQ2. For example, for RQ1, arrows (item 26) were not found to be used as frequently as abbreviations, but in the questionnaire they were rated as being used more frequently, as well as being more helpful. The source of these discrepancies requires further analysis.

Pedagogical Implications

Although there is no control group for comparison, it seems reasonable to suggest that the results of the study point toward a positive effect for training and practice with note taking and suggest that what many teachers are already doing, which is teaching note-taking techniques and giving their learners many opportunities to practice them, will lead to desired outcomes. As anyone who has taught note taking to learners attempting it for the first time knows, the process can be challenging and students can easily get discouraged. With steady effort and plenty of opportunity to practice, however, it is likely that the majority of students will make progress and will gradually gain confidence in their skills.

Conclusion

Research on note taking in L2 contexts is still in its infancy. A handful of studies have yielded some very useful information about the development of this important skill, but much more work needs to be done. This study has attempted to investigate the extent to which a steady regimen of training and practice conducted over the course of an academic year helps students to improve their skills. Despite the limitations of the study, it can be stated that the results are encouraging and that indications are that the students demonstrated significant gains in their skills. Further work on the development of note-taking skills is critical, however. Larger studies with different levels of students would be helpful, as would studies with control groups. One obstacle to this is that close analysis of students' notes is very time-consuming and labor-intensive. Indeed, this may be one reason why so few studies have been done. In order to alleviate the burden on individual researchers, greater collaboration and more funded studies would be welcome.

Bio Data

Michael J. Crawford teaches in the Interdepartmental (Zenkari) English Program at Dokkyo University. His primary research interest is L2 listening instruction. He is also interested in materials development and content-based instruction.

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