

# Lecture Notetaking: Questions and Answers

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This paper provides an overview of research on lecture notetaking. Despite the importance of this academic skill, to date it has not received much attention from researchers working in L2 contexts. As the Japanese Ministry of Education moves towards encouraging universities to offer more lecture courses in English, it is important for teachers to gain a better understanding of the processes involved in notetaking, and how to help learners to develop their skills. To this end, the paper poses 8 questions that teachers may have about notetaking and provides answers from the research that has been done to date in both L2 and L1 contexts. Because the amount of research in L2 contexts is still small, the answers given are not meant to be definitive. However, it is hoped that they will provide some preliminary answers to questions that teachers may have.

本論はノートテイキング(講義をノートに書き写す)に関する研究を概観する。ノートテイキングは重要なアカデミックスキルであるにも関わらず、L2環境における研究はこれまであまり注目を浴びてこなかった。文部科学省が英語による大学講義科目の拡大を推進している昨今、教員がノートテイキングの過程及びその指導方法に関する知識を得る重要性が益々高まっている。この現状を受け、本論では、ノートテイキングに関して、教える側が持つ可能性のある8つの質問を提起し、これまでのL2及びL1環境で行われた研究の中から答えを導き出す。L2環境における研究が未だ少ないことから、導き出した答えは決定的とは言えないが、ノートテイキングに関する教師の疑問に少しでも答えられたことを願う。

**N**otetaking is an important academic skill. Van de Meer (2012) states that it “is often taken to be the distinguishing characteristic of learning at university” (p. 13). Despite its importance, however, notetaking has received relatively little attention from researchers working in L2 contexts, including those based in Japan. There are several reasons why this should be remedied, but first and foremost is that in its push to internationalize higher education, the Japanese Ministry of Education is encouraging universities to offer more courses in English (MEXT, 2012). This trend, which is not limited to Japan, offers potential rewards for students. However, it also presents challenges, one of which undoubtedly is notetaking (Haswell & Lee, 2013). Although notetaking has not been the focus of much research in L2 contexts, there is some useful research available. Additionally, research on notetaking in L1 contexts (both English L1 and Japanese L1) is related

to and has implications for L2 learners. Accordingly, the purpose of this paper is to pose some questions that teachers may have about notetaking, and provide answers from the research that has been done to date.

## Question 1: Should notetaking skills be taught, or do learners just pick them up naturally?

DeZure, Kaplan, and Deerman (2001) write that “notetaking has generally been taken for granted by both instructors and students” (p. 1). In many cases, teachers may just assume that students will pick up notetaking skills on their own. Research has shown, however, that this view may be mistaken, and that many students in both L1 and L2 contexts need help developing their notetaking skills. Kenneth Kiewra, a leading researcher on notetaking among L1 learners in the United States, writes that students, “left to their own devices are terribly incomplete note takers recording only about 30% of lecture idea units for future reference” (Kiewra, Benton, Risch, & Christensen, 1995, p. 173). Perhaps not surprisingly, some research suggests that for L2 learners the situation may be even worse. In a study of notetaking skills among L2 learners in the United States, Carrell (2007) found that students only recorded about 20% of main ideas or supporting details in a lecture.

## Question 2: Does notetaking instruction lead to positive results?

In a wide-ranging review of studies conducted in English L1 contexts, Kobayashi (2006) found a modest effect for the benefits of instruction on notetaking. An important factor found was academic level, with lower-level students showing greater benefits than higher-level students. Positive results have also been found in L2 contexts. Hayati & Jalilifar (2009) found that Iranian students who experienced notetaking training did better on a listening comprehension test than students who took notes but did not receive any instruction, as well as students who

took no notes. Similar results were found for Taiwanese students (Tsai & Wu, 2010). Here in Japan, Crawford (2015) found that students who received notetaking instruction and had many opportunities to practice improved their use of notetaking techniques that are considered to be effective. Lauweireyns (2015) obtained similar results with Japanese students, and also found that training in notetaking led to better listening comprehension.

### **Question 3: What techniques for notetaking have been shown to be helpful?**

Effective notes are not necessarily copious notes. In fact, one study showed an inverse relationship between the overall amount of notes taken and lecture comprehension (Dunkel, 1988). What seems to matter is efficiency, and that means writing down only important information (e.g., content words as opposed to function words), and using techniques such as abbreviations, symbols, underlining, highlighting, and arrows; in short, techniques that allow students to write down key ideas and any relationships between them in a timely and efficient manner. Support for this in an L2 context can be found in the aforementioned study by Carrell (2007), and in a Japanese L1 context in Saito and Harada (2007). In the latter study, notetaking techniques of high school and university students were examined. Within each group, it was found that those students who used techniques such as underlines, circles, and arrows more frequently performed better on a test related to the content of a 60-minute lecture.

### **Question 4: Does notetaking have positive effects on comprehension?**

When discussing the effects of notetaking on comprehension, two distinct functions can be considered: the encoding function and the storage function (Kiewra, 1989). The encoding function refers to the actual process of taking notes, whereas the storage function refers to the ability to keep notes after a lecture and utilize them for later review. With regard to encoding, Kiewra (1989) found that only about half of the studies he reviewed showed positive effects. With regard to storage, also in L1 contexts, the findings are more robust, with studies in English L1 (Armbruster, 2009) and Japanese L1 (Kishi, 2004) showing benefits. In L2 contexts the amount of research in this area is limited, but Dunkel, Mishra, and Berliner (1989) failed to find support for the encoding function, as did Hale and Courtney (1994). As was noted above, however, Hayati and Jalilifar (2009) did find benefits for encoding, with students who didn't take notes doing more

poorly than those who did on a comprehension test immediately following a listening task. There is also some evidence that students perceive the encoding process to be beneficial. Hale and Courtney (1994) found that 77% of the students in their study reported notetaking as helping them remember information in a lecture. With regard to the storage function in L2 contexts, Liu (2001, cited in Liu & Yi, 2012) found support in a study of Chinese EFL students. However, while storage was found to aid in the remembering of specific information (e.g., dates, etc.) in a lecture, it did not necessarily improve students' ability to recall more general information. While all of the results noted above are interesting, it is worthwhile to note that the quality of students' notes has not always been taken into consideration. Clearly, the usefulness of the storage function depends in part on how well students have encoded information in their notes. Further research should examine this relationship.

### **Question 5: How important is working memory in lecture notetaking?**

Lecture notetaking places a significant cognitive load on working memory. Students must not only listen, process information, and write it down, but they must do so while simultaneously continuing to listen to what is being said so that they do not fall behind. However, somewhat surprisingly, most, but not all L1 research has not shown any significant relationship between notetaking and working memory. Peverly et al. (2013) describes this as being "a bit perplexing" (p. 122). In L2 research, the number of studies is limited, but Dunkel, Mishra, and Berliner (1989) also failed to find a relationship, as did Carrell, Dunkel, and Moulan (2000). Peverly et al. (2013) suggest that one possible reason for this is that long-term memory resources, such as writing speed, background knowledge, and language comprehension, play a more important role than short-term memory. In the case of L2 contexts, the last one, language comprehension, may be particularly pertinent.

### **Question 6: To what extent does language proficiency mediate notetaking ability?**

Peverly et al. (2013) note that the amount of research on the relationship between language proficiency and notetaking ability in L1 contexts is "extremely limited" (p. 116), and that the research that has been done has failed to detect a meaningful relationship. This may be so when research is focused on L1 learners only, but in L2 contexts, the situation is likely to be quite different. Clerehan (1995) com-

pared the notetaking skills of L1 and L2 students in Australia and found that the L2 students' notes were much less comprehensive than those of the L1 students. With regard to the hierarchical structure of the lecture, the L2 students failed to record 19% of level 1 (main) ideas, and 43% of both level 2 and level 3 (supporting) ideas. She attributes this to their language proficiency, and states that the L2 students are at a "huge disadvantage" (p. 145).

### Question 7: Are there any differences between students who take notes on a computer and those who do so with pencil and paper?

Peverly et al. (2013) found that handwriting speed is a significant predictor of note quality, and that note quality was a significant predictor of lecture recall. However, no matter how fast a person can write longhand, it is unlikely that he or she will be able to write as fast as a skilled typist. For this reason, it may come as no surprise that Bui, Myerson, and Hale (2012) found that students using computers (in an L1 context) were able to take significantly more lecture notes than students writing by hand. They also found that students who typed their notes performed better on a test of lecture comprehension, but Beck, Hartley, Hustedde, and Felsberg (2014) were unable to replicate this finding. Results from a similar study by Mueller and Oppenheimer (2014) also contradicted Bui et al. (2012). In their study, L1 students taking notes on a computer did not do as well on a recall task as peers who used pencil and paper. The authors suggest that because they were able to type quickly, they essentially wrote down verbatim what the lecturer said, and that this actually impeded comprehension. These results suggest that the kind of cognitive processing that goes on during the encoding function may be critical. Namely, that it is important to process the information and transfer it into one's own words rather than just writing down word for word what the speaker says.

### Question 8: Does the provision of notes or outlines have any impact on how students take notes and how well they comprehend lectures?

One method of helping students deal with the challenge of notetaking is to provide training in effective techniques, as was noted above. However, another potentially useful method is to provide students with outlines or other types of lecture notes before a lecture is given. In L1 contexts, a number of studies have been conducted which attempted to examine the possible benefits of this type of sup-

port. In a review of these studies, Armbruster (2009) concludes that, on the whole, the evidence is that these methods help students to take more notes and facilitate learning. Most recently, Peverly et al. (2013) found that even just providing students with sheets of paper which indicated the main sections of the lecture aided comprehension. Working in an L2 context, Song (2008, cited in Song, 2011), found that providing an outline benefitted students, but this applied more to higher-level students than lower-level students. For the higher-level students, the outline led to more and better organized notes. In contrast, the lower-level students appeared to have been unsure of where in the outline to record details, and this may explain why their notes were less complete.

### Conclusion

This brief overview of research into lecture notetaking has addressed a number of issues that are likely to be relevant to teachers who teach academic listening. Although it is hoped that this will answer some questions teachers may have, it is important to reiterate that the amount of research in L2 contexts is limited, and that at this point it is too early to make any firm conclusions. Nevertheless, the research that has been done has begun to shed some light on important issues, in some cases confirming and extending results found in the much more extensive body of research in L1 contexts (e.g., the benefits of training), but in other cases yielding different results (e.g., the role of language proficiency). Considering that in the future, students in Japan and other countries will likely be faced with an increase in the number of lecture courses they must take in English, and considering how important notetaking abilities are for academic success, it is essential that more research addressing these and other important questions be conducted.

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