

The Effects and Efficiency of Hearing Stories on Vocabulary Acquisition by Students of German as a Second Foreign Language in Japan

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The usual approach to vocabulary learning is to present students with a list of words to be memorized, present them in the context of a text, and then provide exercises to "reinforce" the vocabulary. The purpose of these studies with beginning level German-as-a-foreign language university students in Japan was to determine whether beginning level students with limited vocabulary in German could sustain their interest in hearing a story for over 20 minutes, and to determine how much vocabulary could be gained just from hearing stories, without a list to memorize and supplementary vocabulary exercises. The first experiment showed that hearing a story had a higher acquisition/learning rate than a list method. The second and third experiments showed that supplementary focus on form activities were not worthwhile on vocabulary acquisition/learning, and that the rate of acquisition/learning was .10 words per minute during the seven weeks. It appears to be the case that students acquire six words per hour when they hear stories, while they learn 2.4 words per hour in traditional classes.

The usual approach to vocabulary learning is to present students with a list of words to be mastered, then present them in the context of a text, and then provide exercises to "reinforce" the vocabulary. Research, however, tells us that a great deal of vocabulary acquisition can take place through story hearing, read-alouds, and pleasure reading (Cho & Choi, 2008; Elley, 1989, 1991; Vivas, 1996; Mason & Krashen, 2004; Krashen, 2004; Wang & Lee, 2007).

The goal of the studies presented here is to determine whether and how much vocabulary can be gained without presenting students with a list of words, and without supplementary vocabulary exercises, using a method in which target words are presented in the context of a story. The approach used here is not a pure "acquisition" approach, as some focus on form is involved. The results of the study thus will have limited implications for theory. The results will tell us, however, if a story-centered method can work, and whether we can dispense with at least some aspects of traditional instruction, which we suspect discourages students from foreign language

study.

The three experiments here were replications of the experiments done using EFL college students in Japan (Mason, 2005; Mason & Krashen, 2004), which investigated the value of hearing stories in a language class for vocabulary acquisition/learning. The results of the three experiments confirmed the results of the previous studies although the language used in these experiments was the students' second foreign language, which was less familiar and less accessible to the participants.

Experiment 1

Participants

The participants were seven 2nd year German as a 2nd foreign language (G2FL) students from various departments such as education, sociology, and English/American Literature. All were in the German C – class (3rd semester) at a four-year college in Osaka, Japan. They had no previous experience in German study in their secondary schools.

The German C class was held twice a week for 90 minutes. The participants had participated in German A (one semester) and B (one semester) classes before, which were also held twice a week for 90 minutes. The estimated class hours by the time of this experiment were about 100 hours.

Although the seven subjects had all been learning German for the same amount of time and under similar circumstances, there was some variability among them in terms of German competence.

The class followed Themen Neu 1, a course book based on the communicative approach. The two classes per week were taught by a native Japanese teacher and a native German teacher as a team. The participants had never heard a story told in German by a native speaker of German before.

Questions

The participants took part in two different experiments (A and B) about vocabulary acquisition/learning. In experiment A, vocabulary should be gained (acquired or learned) and remembered simply by listening to a story. In experiment B, a traditional method was used, namely, simple word-explanation with translation. The questions investigated were:

1. Will the beginning level participants be able to sustain their attention to a story told in German by a native speaker of German for 20 minutes?
2. If they could, will they be able to acquire/learn words from listening to the story?
3. How much new vocabulary is retained with each method after two weeks?

Experiment A: Story-hearing Procedure

One week before the experiment took place, the subjects were given a list with 36 words (various categories), which would later be included in the story, in order to determine which words students were already familiar with. As expected, there was some variability among the students.

On the day of the experiment, the 36 words were written on the black board before the story was told. Pictures, drawings and gestures were used to help make the story comprehensible. Every time one of the 36 words appeared in the story, the teacher pointed at it on the black board. If students failed to get the meaning of a word through pictures, drawing and gestures, translation was given. The story-telling as such took approximately 20 minutes.

Immediate and delayed post-tests after 2 weeks

After hearing the story, students were asked to write a summary of the story in Japanese with the help of the list of words on the board. After having written the summary, the subjects were given a list with the 36 words (in the same order as they had appeared in the story) and were asked to translate them into Japanese. Two weeks later, the participants were again given a list of the 36 words and were asked to translate them into Japanese.

Experiment B: Word-explanation / translation and memorization Procedure

On the day of the experiment, the subjects were given a list with 36 words, corresponding in parts of speech to the 36 words used in Experiment A. The words were explained to the subjects by means of paraphrasing or by simply translating them into English or Japanese. The low and similar pre-test scores (see below) confirm that these words were unfamiliar to the students and that the lists from Experiment A and B were of similar difficulty.

While listening to the explanation, subjects were asked to write down the Japanese equivalent next to each of 36 German words on the list. The explanation / translation of the 35 words took approximately 15 minutes (about 25 seconds per item). After the 36 words had been successfully explained / translated to the subjects and the Japanese equivalents had been written down, the subjects were given 20 minutes (same amount of time as story-telling had taken) to memorize the 36 words by themselves in any way they wanted to.

Post-test and delayed post-test after 2 weeks

Immediately after the 20 minutes given to the subjects for memorizing the 36 words, they were given a new list with the 36 words (in different order) in German and subjects were asked to write down the Japanese equivalents. Two weeks after the first post-test, the subjects were again given a list of the 36 words and asked to write down the Japanese equivalents.

Results

The gains that were made by both groups after two weeks were identical. The story group gained 4.5 words and the list group gained 4.6 words. However, when the gain was divided by the time spent on the lessons, the rate of learning/acquisition for the story group was .23 almost twice that of the list group (Table 1). More words were forgotten in two weeks with the list method than the story method.

Table 1. Mean and S.D. of Pre-, Post-, and Delayed post-test

Method	Pre-test Mean (S.D.)	Post-test Mean (S.D.)	Gain	Delayed Mean (S.D.) (2 wks later)	Final Gain	Time Spent	Rate Words/min.
Story	1.9 (1.7)	14.3 (6.3)	12.4 (36%)	6.4 (3.0)	4.5 (13.2%)	20 min.	0.23
List	2.4 (2.0)	24.4 (3.4)	22.0 (65%)	7.0 (2.6)	4.6 (13.6%)	35 min.	0.13

Story lesson = 20 minutes / List lesson = 35 minutes

Total number of words on both tests = 36

Unknown words in Story = 36 – 1.9 (pretest score) = 34.1

Posttest = 14.3 correct, but they knew 1.9. (14.3-1.9=12.4) 12.4/34.1=36%

Unknown words for List = 36 – 2.4 (pretest score) = 33.6.

Post test = 24.4 correct, but they knew 2.4. (24.4-2.4=22) 22/33.6=65%

Discussion

The goal of the first study was to determine whether beginning level college G2FL students would be able to benefit from hearing a story in class for effective vocabulary acquisition/learning. The answer is yes: Students using the story method were more efficient in vocabulary acquisition/learning. The results are in agreement with those of a previous study using English as a foreign language (Mason, 2005).

The goal of the second study was to determine whether the same result would be observed using the story method with more exposure to stories. This time a single story was divided into three parts, each session lasting 30 minutes. The delayed post-test was 4 weeks after part 3 of the story was presented.

Experiment 2

Participants

The participants were seven different college G2FL students with no previous experience in German in secondary school. Six out of the seven students were second year students from various departments, such as education, sociology, and English/American Literature. The last one was a fourth year student from the English/American Literature department who had not taken German in her 3rd year. The students had taken German classes in their first year, and had attended the classes twice a week (90 minutes per lesson) for two semesters. The second year they attended German classes four times a week (90 minutes each). At the time of this study they had had a total of about 200 hours of classroom instruction. None of these students had participated in the first study.

Treatment

The class followed Themen Neu 1, a coursebook based on the communicative approach. The four classes per week were taught by a native Japanese teacher and a native German teacher as a team. The research project started at the beginning of December. To ensure students had enough competence to understand a story told by a native speaker of German, the study was done toward the end of the fourth semester.

When storytelling was introduced into the lessons, the students were told that the storytelling was just additional practice to improve their listening comprehension and vocabulary, and that no additional study of the words used in the story was required. The students were not told that a delayed post-test would be given.

In each class session of the treatment, students listened to a story told by a native speaker of German. The students followed the course book during the rest of the class-time. The students listened to a detective story divided into three parts on three separate days, on consecutive class meetings, once a week for three weeks. The last session was completed before the Christmas break.

The three sessions were structured as follows: The students received a piece of paper with all the German words and phrases from the story thought to be unfamiliar to them. They were asked to translate all the words on the list they knew in advance into Japanese. This was the pre-test.

Then the German teacher told the story, giving explanations in German for the unknown words as the story proceeded. To aid comprehension, pictures were drawn on the blackboard and miniature objects were shown. The students were also encouraged to exchange ideas about the meaning of new words and phrases in Japanese among themselves. As soon as the students felt that they understood the meaning of a new word or phrase, they wrote down the Japanese

equivalent on their sheet. This was considered to be the post-test, but it occurred as the students were hearing the story.

After each session of the storytelling, the Japanese teacher or a student read out the correct translations of the new words. The students were asked to mark all the words they had identified correctly and then report the number of words they knew before and the number of words they correctly understood after listening to the story. At the end of each session all students received a vocabulary list with the German-Japanese translations and a copy of the story. This answer check with corrective feedback and explanation took about 15 minutes.

After the Christmas vacation, a delayed post-test was given. The students were asked to translate all target words that were included in the three story telling sessions. As already mentioned, the students were not told that the delayed test would take place. After the students finished taking the test, one student read out the correct translation and the students corrected their results. The students counted how many words they remembered correctly and then the teacher collected their test papers. In this study we attempted to determine the efficiency of vocabulary development, that is, the number of words gained per minute.

Material

The plot of the story was taken from an easy reader in German (Ebbe und Flut). The story was about a detective who discovered that the sweetheart of his youth was involved in criminal dealings. The storyteller attempted to use grammatical structures that were known by the students.

Results

Table 2 presents the means for all three sessions combined. On the immediate posttest, students learned 35% of the words they did not know on the pre-test (total number of words = 103; total unknown = $103 - 19.6 = 83.4$; post-test = 49.1. Total learned = $49.1 - 19.6 = 29.5$. $29.5/83.4 = 35\%$). On the delayed post-test, they scored a mean of 33.3, indicating 13.7 words learned ($33.3 - 19.6$), a 16% gain ($13.7/83.4$). The time spent for the whole lesson was 30 minutes of story-hearing and 15 minutes of corrective feedback. Thus, the rate of acquisition/learning was .10 ($13.7/135=0.10$), or one-tenth of a word per minute.

Table 2. Mean and S.D. of Pre-, Post-, and Delayed post-test

Pretest Mean (S.D.)	Posttest Mean (S.D.)	Gain	Delayed Mean (S.D.) (7 wks later)	Final gain	Time Spent	Rate: Words/min
19.6 (13.1)	49.1(15.5)	29.5 (35%)	33.3 (21.7)	13.7 (16%)	135 min.	0.10

Total number of words on the tests = 103

Unknown words = $103 - 19.6 = 83.4$

Posttest = 49.1 correct, but they knew 19.6. ($49.1-19.6=29.5$) $29.5/83.4 = 35\%$

Delayed posttest = 33.3 but they knew 19.6. ($33.3-19.6=13.7$) $13.7/83.4 = 16\%$

The difference between pre and delayed post-test scores was highly significant (t-test for correlated samples, $t = 3.44$, $df = 6$, $p < .01$).

Discussion

The treatment in this study was a combination of focus on form deliberate learning and acquisition from comprehensible input. The pre-test clearly signalled to students that vocabulary was the focus of the activity, the storyteller confirmed this by explaining and illustrating the

meaning of target words, and the students were continuously focused on the words during the telling of the story. There was, however, no "study" of vocabulary before the story was told, nor was there any between the post-test and the delayed post-test, and students listened to a comprehensible and (we hope) interesting story.

It is thus impossible to determine how much of the gain in vocabulary was due to "learning" and how much was due to "acquisition." On a practical level, however, the results of this study tell us that vocabulary gains are possible when new words are presented in the context of a story, without additional vocabulary activities.

In this study students received corrective feedback and after the lesson they took the list of the words with Japanese definitions and the original text home. In experiment 3, corrective feedback was deleted from the instruction, and the list of words with Japanese definitions and text were not given to the students.

Experiment 3

The procedure in experiment 2 included both obvious focus on form and comprehensible input. Experiment 3 was designed to determine whether vocabulary development could take place with less form-focus. In addition, we attempted to determine the efficiency of vocabulary development again. In the second experiment, the teacher gave the list of the words, the Japanese definitions of the words on the list, and the text to the students after each session. The students might have studied the words during the vacation. In experiment 3, this was not done; corrective feedback was not given after storytelling and the text and the list with Japanese definitions was not given to the students.

Participants

The participants were the same class of students who participated in the second experiment. This time the experiment was conducted in late June and July in the 5th semester. By then, students had had, at most, 270 hours of classroom instruction in German.

Treatment Change

In the second experiment, the same story was continued during the three sessions (over 3 weeks), but in this study three different short fairy tales were read (The Frog Prince, Little Red Riding Hood, and Hansel and Gretel), one in each session. The number of target words for each story was 20. The procedure was the same as in the previous study, except that this time the participants were not given the Japanese definitions of the words after the post-test, and the text and list of words were not given to the students after the session. In addition, a different native speaker German teacher told the stories.

The delayed post-test was given four weeks after the last session. As one student was absent for one story, her data was deleted from the analysis. Thus, six students participated in experiment 3. Table 4 lists the features of the two experiments.

Table 3. The Features of Experiment 2 and Experiment 3.

Procedure	Differences	
	Experiment 2	Experiment 3
Pre-test	Yes	Yes
Posttest	Yes	Yes
Meanings provided after post-test	Yes	No
Text Given after post-test	Yes	No
Story Used	3 parts of one story	3 different stories

Number of Words	103	60
Delayed post-test	Yes 4~7 weeks later	Yes 4~7 weeks later
Number of Participants	7	6
Teacher	MV	KY
Time spent for the lesson	135 minutes (30 minutes for listening and 15 minutes for corrective feedback and answer check for each lesson)	60 minutes (20 minutes for story listening only for each lesson)

Results

The mean pre-test score was 10.7, or 18%, nearly identical to the percentage correct in experiment 2 ($19.6/103 = 19\%$), confirming that the lists were of similar difficulty and that most words were unknown to the subjects.

Table 4 presents descriptive statistics for the pre-, post- and, delayed post-tests. There were 60 words in total. The participants scored 10.7 correct on the pre-test. While they listened to the stories, they learned 28.5 new words, but they eventually forgot an average of 22.5 of them. They thus remembered six words, or 12% of those they learned, after four to seven weeks. The rate of acquisition/learning was .10, six words in 60 minutes, or one-tenth of a word per minute.

Table 4. Mean and S.D. of Pre-, Post-, and Delayed post-test

Pretest Mean (S.D.)	Posttest Mean (S.D.)	Gain	Delayed Mean (S.D.) (4~7 wks Later)	Final Gain	Time Spent	Rate: Word/min.
10.7 (5.3)	39.2 (7.3)	28.5 (58%)	16.7 (7.2)	6 (12%)	60 min.	.10

Total number of words on the tests = 60

Unknown words = $60 - 10.7 = 49.3$

Posttest = 39.2 correct, but they knew 10.7. $39.2 - 10.7 = 28.5$. $28.5/49.3 = 58\%$

Delayed posttest = 16.7 but they knew 10.7. $16.7 - 10.7 = 6$. $6/49.3 = 12\%$

There was a statistically significant difference between the pre-test and the delayed post-test scores (*t* test for correlated samples, $t = 3.80$, $df = 5$, $p < .01$).

Discussion

The figures presented here are undoubtedly an underestimate of language acquisition from the stories: Students may have acquired other words that were not focused on, as well as other aspects of language (grammar and pronunciation). Also, our tests only measured relatively complete vocabulary acquisition, to the point of being able to supply a synonym. It is possible, and likely, that subjects acquired parts of the meanings of unfamiliar words, even if they could not produce a translation (Nagy, Herman and Anderson, 1985).

Experiment 1 compared a story method and a list method. In both cases, subjects retained 13% of the new words one week later, but the rate of acquisition/learning using the story method was more efficient, almost twice as fast as the list method.

Experiments 2 and 3 differed in several ways: Different storytellers were used and

different stories were told, students were slightly more advanced in German in study 3, one story was used in study 2, but three different unrelated stories were used in study 3, and study 3 contained less focus on form: students were not given a list of the words with correct translations nor the text in German after the story, as they were in study 2, nor were they given feedback on their post-test results. They were focused on form in study 3, but not as much as in study 2.

Vocabulary growth occurred in three studies, however, which suggests that the corrective feedback given in study 2 was not necessary for vocabulary acquisition to occur. The results also show that adult foreign language students at the beginning level can acquire vocabulary through story listening, just as children can (Elley, 1989). In fact, our results are reasonably close to Elley's in terms of percentage of words learned: The conditions in our second study were nearly identical to those in Elley's "reading with explanation" condition, and the results were similar: In his study, eight year olds heard the same story three times, and teachers explained the meanings of words as they occurred, in ways similar to that done here. Testing was done one week after the last reading. For one story, students identified 40% of the unfamiliar words, in another, 17%. In experiment two, students were able to identify 35% of the unknown words on the immediate test and 16% on the delayed test that was given four to seven weeks later.

The forgetting rate of the list method is clearly much faster than the story method. With the story method remembering went down from 58% to 12% in 7 weeks (study three), but with the list method it went down from 65% to 14% in just two weeks.

In studies two and three, the rate of vocabulary acquisition/learning was about six words per hour. This was not as high as reported for English vocabulary in a study of English as a foreign language in Japan (rate = .25 words per minute; Mason and Krashen, 2004); the subjects in the EFL study were more advanced, however, which meant it was easier to make stories comprehensible.

We were unable to determine the relative contributions of language acquisition and language learning in this study (but see Mason and Krashen, 2004). What is clear, however, is that gains in vocabulary occurred merely from presenting words in stories, without pre-teaching and without supplementary vocabulary study and without feedback on results, gains that could extrapolate to several hundred words per semester if more storytelling is included.

We estimated from examining texts used in the classes that German students had learned or acquired about 300 to 500 words, about .04 words per minute (200 hours = 12000 minutes. $500/12000=0.04$ words per minute). Devoting just 30 hours over the year to storytelling would mean 180 words gained, an increase of about 108 words over the usual amount of vocabulary learned. [At .04 words per minute, or 2.4 words per hour, 30 hours would result in 72 words. At .10 words per minute, or six words per hour, 30 hours would result in 180 words. The difference is 108 words.]

Obvious flaws in these studies are that no comparison group was used, and there were only six to seven participants. The target words, however, were not used in class during the time between the story listening and the delayed testing, nor did students have any obvious source of German outside of class.

Teachers of German as a foreign language should be especially interested in these results. As English has become the world language, and other foreign languages have become less popular (e.g. Dornyei, Csizer, and Nemeth, 2006), the use of an easier and faster way of acquiring foreign language vocabulary may save the less popular languages from disappearing from foreign language programs in schools.

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