Rapid Comprehension in the Japanese EFL Context (2) \(^1\)

Toshihiko Shiotsu \(^2\)

Introduction

Understanding of the human capacities underlying second language (L2) communication requires careful and systematic research. We have seen several major shifts in the language researchers’ views on such capacities: from linguistic/cultural habit formation (Lado, 1957) to grammatical competence acquisition (Chomsky, 1965) to communicative competence development (Canale and Swain, 1980). The prevalent view for the past two decades has been that the learner must not only internalize the target language grammatical systems but also acquire the ability to use these systems in ways appropriate within the particular sociolinguistic context. This emphasis on and foregrounding of communicative competence is in itself justifiable since the concept of language behavior reformulation runs counter to the generative aspect of human language while a mere grammar rule learning has proven insufficient for fulfilling the communicative functions in sociolinguistically authentic manner. There is a concern, however, that the pendulum has swung too far in the direction stressing the sociolinguistic aspect of communicative competence and that the psycholinguistic or cognitive aspect of it might deserve more attention than it has so far received (Skehan, 1998).

Second language acquisition (SLA) researchers who did pay attention to its cognitive or psycholinguistic aspect (e.g. McLaughlin et al., 1983; Schmidt, 1992; DeKeyser, 1998) have rightly drawn on the work of cognitive psychologists for possible explanations of SLA phenomena. Whatever the theory and terminology these researchers chose to employ (e.g., “automaticity”, “restructuring”, “proceduralization”) in their own attempts at explaining SLA phenomena, a shared view among them seems to be that, rather than a particular item or aspect of the target language system being dichotomously acquired or not acquired, there are in fact degrees to which the target item is internalized, and that a significant aspect of SLA is to improve the degree to which the target items are internalized (i.e., more “automatised”, more “procedurised”, etc.). The notion of language processing speed fits well with such an interpretation of SLA. One must not only “know” a particular item or aspect of the target language but also become sufficiently quick at accessing and integrating this “knowledge” in generating or comprehending verbal messages containing it. The author’s paper “Rapid Comprehension in the Japanese EFL context (1)” (Shiotsu, 1997) has addressed the problem of target language processing speed among the Japanese EFL learners and, through a survey of research within the information-processing approach to L2 acquisition and consideration of the reading/listening commonalities, laid the theoretical foundation for an empirical study that would explore possible means of facilitating rapid comprehension among such learners. Following that theoretical work, the current paper reports on three separate small-scale experiments which evaluated the effects of rapid comprehension training among Japanese junior college students learning English as a foreign language. The training took the form of speeded L2 text reading on video screen (Video Text Reading), a new attempt to avoid some shortcomings of other more popular methods of developing visual processing skills and to improve the learner’s general comprehension efficiency, i.e., processing efficiency necessary for comprehension of a verbal message in L2 whether it is presented visually or auditorily.

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Problems and General Research Questions

A relatively common practice employed in the hopes of developing the learner's processing efficiency for L2 comprehension is to somehow pressure the learner to silently read and comprehend a given text as quickly as possible. A natural criticism of such a practice would be that it is the reader's solid comprehension skill that enables rapid reading comprehension and that any speed gain resulting from application of such pressure is superficial. It thus must be meaningful to systematically investigate whether introducing the element of time pressure in text comprehension practices can facilitate processing efficiency development. One of the purposes of the research reported here is to investigate this. In the form of a research question, it can be expressed as: Can speeded text comprehension practices lead to better text processing efficiency?

Cases of verbal or hearing disabilities aside, many of the individuals with L1 reading problems are normally-functioning in terms of aural/oral communication and are thus assumed to have a fully developed linguistic competence. We are aware that the same does not hold in the case of L2 learners. One of the major issues in L2 reading research since the 1980s has been whether the L2 reading problem is a language problem or a reading problem (Alderson, 1984), and the learners' target language proficiency, rather than their L1 reading ability, has repeatedly emerged as an important, if not the most important, variable explaining the individual differences in L2 reading comprehension ability (e.g., Bossers, 1991; Laufer, 1992; Bernhardt and Kamil, 1995; Lee and Schallert, 1997). The wide individual differences among the L2 learners in underlying L2 competence contrast sharply with the general homogeneity of the L1 readers in their basic L1 linguistic competence, and it indicates that visual text processing and phonics training alone, which could well be effective if it were for L1 reading problems, will not suffice in the case of L2 reading problems. L2 linguistic competence can be thought of as L2 linguistic knowledge (Chomsky, 1965; Bachman, 1990), and it is the central part of this knowledge—morphosyntax and lexicon—that the Japanese EFL pedagogy is often criticized for over-stressing without providing training to actually use such knowledge fluently in authentic comprehension. Surely, Japanese EFL readers would be seriously disadvantaged if they lack the skills to apply their knowledge of English in real life comprehension with reasonable fluency. This ability seems to be equivalent to the comprehension component of what Cummins (1983) calls "basic interpersonal communication skills (BICS)".

Where the target language is widely used for communication in the society, as in the ESL situations in the USA, UK, etc., it seems natural for the learners to maintain a high level of motivation for improving their BICS for daily communicative functions. Contrarily, in countries like Japan, within which a great majority of the population shares a socially established L1-Japanese whereas L2-English has clearly only a foreign language status with very limited real life communicative functions, it is unrealistic to expect the learners' BICS to develop naturalistically unless the learner is exceptionally determined to find practice opportunities. Thus, it might be beneficial if the pedagogy could provide opportunities for improving the ability to use the knowledge of English for comprehension not faltering but with reasonable fluency. In listening comprehension, speedy access to knowledge for syntactic and semantic analyses is vital, but has been felt difficult to develop in the Japanese EFL learning environment.

Whether, as has often been argued, the traditional Japanese EFL studies geared towards written tests have actually contributed or not, it appears that many Japanese EFL learners are more accustomed to processing written text for extremely close reading than processing relatively rudimentary aural input for its gist. Also, at the anecdotal level, we observe Japanese EFL
learners who are good at rapid reading as having correspondingly efficient aural comprehension ability. While, in general, the differences between reading and listening tend to be highlighted, it should be interesting if training in one should lead to improvement in both skills. Nothing will change the fact that comprehension skills in different modalities require training in their respective modalities, i.e., reading requires training in visual text processing and listening requires training in auditory language processing. However, any means of supporting the Japanese EFL learners accustomed to print but struggling to improve their efficiency for grasping the gist in listening seemed worth a systematic observation. The current paper thus aims to explore video text reading for an additional purpose: to evaluate it as a potential means of improving the L2 processing efficiency related to both reading comprehension and listening comprehension. In the question form it might be phrased: Can speeded video text reading facilitate the development of efficiency for reading and listening comprehension among the Japanese EFL learners?

The following section reports on three experiments conducted with the goal of answering the two general research questions addressed above. Each of the three experiments has a distinct subsidiary question.

The Experiments

General Methodology

The three separate experiments reported below shared the same basic format. They all took place at the same Japanese junior college with groups of English majors as subjects and utilized existing groups. In each experiment, in addition to the theoretical and practical English courses provided for all of the subjects, half of them (Experimental Group) received speeded video text reading exercises, while the other half (Control Group) were engaged in different exercises (Experiment III) or received no treatment (Experiment I and II). All of the subjects were tested prior to and following the treatment period (pre-test vs. post-test design) to compare their performances in rapid comprehension tasks in English. At no time did the subjects receive explanations of the items they encountered in the pre- and post-testing.

Experiment I

The first experiment explored if receiving training in rapid text reading periodically could lead to improved performance in rapid text comprehension. The experiment utilized intact junior college English classes which met once a week, and it was conducted over a period of five weeks. The research question this experiment was designed to answer was: Can weekly training in speeded video text reading improve the learners’ speeded text comprehension performance?

Methodology

Subjects

A total of 64 students participated in Experiment I. The students had been divided to four separate classes by the college, and the experiment made use of these class divisions. Therefore, neither strict balancing of the groups nor random sampling was possible. Two of the four classes were randomly chosen to comprise the experimental group (n=28) and the other two classes, the control group (n=36). The subjects in both groups were taking the various junior college English courses, and there were individual differences in the courses taken even within the experimental and the control groups.
The Differential Conditions

The subjects in the experimental condition received weekly training in speeded text reading on a video screen for five to ten minutes. The text was a passage from an EFL reading course book (Heyer, 1993), which was thought to be linguistically simple and easy to understand for most of the subjects. The body of the passage had been segmented and the segments appeared on video screen in the correct sequence. Each segment remained on screen only for a limited duration until the next segment replaced it. The subjects were thus under time pressure to read each segment before the next one replaced it. This created a unique condition, differing from paper-based speeded passage reading. The paper-based speeded passage reading would have allowed the reader total self-control in maintaining the concentration to read fast throughout the passage thus setting the pace of reading individually. Although the reader may try to read the passage as fast as possible, it must be difficult to constantly read fast, and regression is always an option. The video text reading creates immediate time limits repeatedly so that the pace of reading is somewhat controlled with little regression and distraction permitted. This was expected to free the learners from the habit of extremely careful reading, of which regression and excessive fixation on details are the characteristics. In each of the five weekly video text reading sessions, the subjects read a new passage and answered post-reading comprehension questions, which helped encourage them to actually understand the passage rather than simply move their eyes along the lines on the screen. The subjects in the control condition had no alternative training. It was not possible to determine if individual students received any additional training outside of the college studies during the experimental period.

Evaluation and Analysis

The effects of the training were evaluated through a pre- and post-test comparison of the subjects' performances on a speeded reading comprehension task. It is important for this sort of research to ensure that any gain in efficiency is measured in terms of comprehension in speeded text processing tasks and not merely in the amount of text the learners claim to have processed. A 20-item rapid sentence reading test was prepared to measure the individual differences in the subjects' ability to comprehend a de-contextualized sentence under time pressure. Each item consisted of a key sentence appearing on the video screen for a limited duration and four printed answer choices, from which the one closest in meaning to the key sentence was to be chosen. To complete an item successfully, not only did the subjects have to understand the meaning of the key sentence but they also had to understand it reasonably quickly, before the key sentence disappeared from the screen. The key sentences and the answer choices were taken from a practice material for the Test of English as a Foreign Language (Educational Testing Service, 1989). The pre-test and post-test contents were identical. The internal consistency of this test as calculated via the KR 20 formula was .56 when the values for the pre-test and the post-test were averaged (.50 for the pre-test data and .63 for the post-test data).

The experiment adopted a repeated-measures ANOVA (one-within, one-between design) to test for any inter-group and pre- and post-test differences in the subjects' rapid reading test performances. Lilliefors K-S statistic for the Experimental-group's post-test was .1894 (p=.0114), indicating that the distribution of the scores significantly deviated from the normal distribution, and that for their pre-test and that for the control group's post-test showed a trend toward statistical significance (p=.0657 and p=.0739, respectively). To account for this non-normality of scores, arcsine transformations of the scores (Woods et al., 1986) were performed prior to ANOVA.
Results and Discussion

Table 1.1 displays the basic descriptive statistics for the pre- and the post-tests. In the pre-test, the experimental group outperformed the control group by more than one point (8.933 vs. 7.361). This initial inter-group gap was not statistically significant, but there was a trend toward significance (df=62, t=1.699, p=.0942). We must take this into consideration when interpreting the ANOVA results.

We also observe in Table 1.1 that the scores of both groups have increased. The mean for the control group moved up from 7.361 to 7.667, and that for the experimental group went up from 8.393 to 9.286, thus the inter-group gap has widened from 1.032 to 1.619.

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Table 1.1

As previously mentioned, the scores were transformed before being subjected to ANOVA. As seen in Table 1.2, there was a significant main effect for group (F=4.608, p=.0357), a significant main effect for test time (F=5.824, p=.0188), and no significant interaction between group and test time. Figure 1 graphically presents these results.

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<td>.005</td>
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Table 1.2

![Figure 1](image)
Since the main effects for group and test time were significant, the results indicate that the subjects as a whole increased their scores and that the experimental group did significantly better than the control group in general. However, although the increase of the experimental group’s scores appears to be slightly greater than that of the control group (see Figure 1), the lack of significant interaction between group and test time prohibits the interpretation that the difference found between the two groups could be attributed to the experimental group performing better on the post-test.

Several interpretations of the ANOVA results are possible. First, it is possible that the experimental condition did not help at all. The significant post-test advantage for the subjects as a whole may have resulted from what is known as the practice effect, i.e., due to the repeated experience of attempting the same items: once in the pre-test and once in the post-test. It should also be noted that the subjects received various English language training through the junior college courses while participating in the experiment, which could have led to a general increase in the subjects’ English reading skills. It would have been ideal if the subjects received no other training than the experimental one, but this was not possible for the reported experiment. Another possibility is that the experimental condition did an effect but the effect was simply not large enough in this situation. It may be that weekly training was not intensive enough for the subjects to truly keep the momentum of processing speed improvement. It could also have been that the extraneous effects of training through the junior college courses given at the same time as the experiment had influenced the effects of the experimental training. An investigation on the courses the individual subjects were taking and on the nature of such courses would have helped clarify the last point, but it was not possible for the current experiment.

The data so far have not provided clear evidence for the effectiveness of the video text reading. Nevertheless, it seems premature to completely dismiss the method as categorically ineffective, especially in light of the increase in the experimental group’s scores. In fact, that increase in their scores leaves us with a hope that it might lead to a significant result if some aspects of the research were refined. The next experiment was an attempt to test the effectiveness of the video text reading in a slightly different condition than the one in which the first experiment was conducted.

**Experiment II**

The experiment reported above was conducted over a period of five weeks with the subjects receiving the video text reading training only once a week. One of the possible sources of the failure to statistically support the experimental condition in Experiment I might have been the length of the training intervals. In other words, receiving the training once a week for five to ten minutes may not have been intensive enough. In the experiment to be reported in this section, the subjects received the training for five consecutive days. Experiment II basically followed the same format as Experiment I but tested whether the video text reading can lead to a significant effect if the training is given in a more intensive training environment. Thus, the research question for this experiment was: *Can a one-week intensive training in speeded video text reading improve the learners’ speeded video text reading test performance?*

One condition that had not been present in Experiment I but was introduced in Experiment II was the approximate equivalence of additional training. Experiment I had been conducted during an academic term at the college, and it meant that there were individual differences in the courses the subjects were taking, thus, in the kinds of EFL training they were receiving,
Experiment II was conducted during a five-day intensive post-term EFL course provided specifically for a small group of graduating students who planned to start a university study in an English-speaking country. Therefore, although there must have been individual differences in the amount and quality of work put into the course, the inter-group equivalence between the experimental and control groups were achieved at least in terms of the classes they concurrently took.

Methodology

Subjects

A total of 22 Japanese EFL students took part in Experiment II. All of the participants had been attending supplementary English language training courses offered in the evening during the regular semesters at the junior college to prepare them for university studies in America, and the five-day post-term intensive course was to complete their two-year preparations at this institution. The intensive course consisted of four specialized classes (e.g., Listening, Vocabulary, etc.) taught daily. The participants had been divided into two groups by the course director, and the experiment made use of this group division. As in Experiment I, it was not possible to achieve strict balancing of the groups nor random sampling. One group was randomly chosen the experimental group (n=10) and the other the control group (n=12).

The Differential Conditions

The experimental training for Experiment II was equivalent to the one in Experiment I with the major difference being that it was given everyday for five days instead of once a week for five weeks. As in Experiment I, the subjects in the control condition received no contrastive training. Except for the presence or absence of this experimental training, the two groups received equal amount and type of English language training. Each of the instructors taught both groups the same contents, adopting basically the same method. It was not possible to control for the differences in the extra EFL training the subjects had received outside of the course work during the five-day experimental period.

Evaluation and Analysis

As in Experiment I, the effects of the training were evaluated through a pre- and post-test comparison of the subjects' performances on a speeded reading comprehension task. The format of the speeded sentence reading test was identical to the one for Experiment I.

The reliability coefficient for this test, as computed via the KR 20 formula, was .60 when the values for the pre-test and the post-test were averaged (.58 for the pre-test data and .63 for the post-test data).

The test scores were subjected to a repeated-measures ANOVA (one-within, one-between design) to test for any inter-group and pre- and post-test differences in the subjects' rapid reading test performances. No transformations were performed prior to ANOVA this time, since neither did the data significantly depart from the normal distribution nor were the inter-group score variances significantly different.

Results and Discussion

The basic descriptive statistics for the test are found in Table 2.1. The initial inter-group gap was .582, which was not statistically significant (df=19, t=.558, NS). Table 2.1 also shows that, in this experiment again, both groups increased their scores. The control group's mean was 8.182
at the outset, but it has increased by one full point to 9.182 in five days. The experimental group’s gain was even larger: their mean showed a remarkable leap of 2.2 from 7.6 to 9.8. Therefore, even though both groups had improved their test performance, the inter-group gap was reversed: the control group lost their initial 0.582 point advantage and allowed 0.618 point gap in the opposite direction at the time of the post-test.

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Table 2.1

Table 2.2 displays the ANOVA results. There was a significant main effect for test time (F=6.958, p=.0162) but not for group, and there was no significant interaction between group and test time. The changes in the two groups’ means are presented graphically in Figure 2.

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Table 2.2

Figure 2

The significant main effect for test time suggests that the subjects as a whole performed better on the post-test than on the pre-test. The lack of main effect for group is understandable since the inter-group gaps were averaged out between the pre-test and the post-test. Since there
was no significant interaction between group and test time, differential effect of the experimental condition was not supported.

The ANOVA results for Experiment II yielded no more support for the experimental condition. As in Experiment I, it is possible that the general increase in the scores resulted from practice effect. This possibility seems stronger in Experiment II, as only four days had intervened between the two test times.

Since there was no difference in the classes the two groups had to attend at the time Experiment II took place, there is much less doubt of any extraneous training factor influencing the results of Experiment II, compared to Experiment I.

Despite a seemingly large difference in the magnitude of increase in the scores between the experimental and the control groups, the experimental treatment was without statistical support again.

One unfortunate condition, which could not have been dealt with, was the relatively large gap in the pre-test scores between the experimental and the control groups. Although this gap was found not to be statistically significant, it would have made the interpretation of results much easier if the initial inter-group gap had been closer to zero.

Also, depending solely on the video text reading test for the testing of the effects of video text reading training can make the results difficult to interpret, as it will not be clear whether any increase in the experimental group’s mean was due to real development in the processing efficiency or to gaining of familiarity with the very act of reading English messages on the video screen. Adding a method of evaluating the experimental effect which does not depend on video text reading would seem to improve the interpretation of the results.

Despite the lack of conclusive evidence in support of the video text reading training, the general increase in the subjects’ performance on the video reading test leaves much room for further research on this topic. The following section reports on yet another study on video text reading, which aimed to gain more information about the subjects’ abilities than those reported so far by combining an additional measurement of the subjects’ performance.

**Experiment III**

One of the difficulties in interpreting the results from the two experiments above originated from their reliance on the video text reading test as the single means of measuring the subjects’ processing efficiency development. The last of the three experiments attempted to address this problem by adding a test of listening comprehension, which also requires speedy processing of linguistic input. There were two reasons for the use of a listening test in this experiment.

First, since rapid comprehension is the ability in question, any conventional paper-based reading comprehension test with a single time limit for the whole item set seems incapable of valid measurement. At the same time, use of the video text reading test to measure the subject’s rapid comprehension ability would obscure the results as task familiarity could be implicated. Listening was introduced as an alternative since it involves rapid processing of incoming verbal strings, as in rapid reading, and it can be tested without subjecting the testees to visual text processing, unlike the video reading test. If two groups received equivalent EFL courses except for the differential rapid text processing practices and only the experimental group exhibited a significant gain in the listening comprehension performance, it would seem to indicate that the condition in which the experimental group was trained did contribute to their improved efficiency.
in language processing and that it did not merely familiarize the subjects with the act of reading text on video.

Another reason for the addition of the listening test was to explore the pedagogical value of developing processing fluency for listening through rapid reading practices. This was secondary to the evaluation of the video text reading training on visual processing efficiency, but it provided an opportunity for a structured effort to evaluate a possible means of supplementing the listening training for Japanese EFL learners. If the training in rapid reading led to improved performance in both rapid reading and listening, we should continue to examine the training for further refinement.

To summarize, Experiment III set out to answer the following research question: Can the video text reading training improve one's listening comprehension test performance?

Methodology
Subjects

The subjects for Experiment II were in a five-day intensive post-term course for those preparing for a university study in America. Experiment III again sought data from this annual five-day intensive course but from a different group, one year after Experiment II was conducted. 31 participating students had been assigned into one of two groups by the course director. As in the other experiments reported here, rigid group equivalence and random sampling were unfortunately not achieved. The experiment again used the two intact groups and randomly named one group the experimental group (n=14) and the other the control group (n=17).

The Differential Conditions

The experimental training for Experiment III was equivalent to the one in Experiment II. In this experiment, however, the subjects in the control condition received an alternative training. The control group had paper-based speed reading practices with the same reading passages as the ones read by the experimental group on the video screen. Each of the reading passages was printed on a single sheet of paper and was to be read as fast as possible, and the reading time for each individual was recorded. The control group also answered the same post-reading comprehension questions as the ones the experimental group did. This alternative condition for the control group ensured that the effects of video text reading practices, and not simply that of some additional work, would be evaluated in this experiment. As in Experiment II, all other English language class contents, instructions, and activities in the five-day training were balanced between the two subject groups though the experiment was again unable to control for individual differences in extra studies and practices the subjects might have been engaged in outside of class hours.

Evaluation and Analysis

In this experiment, the training effects were evaluated through a pre- and post-test comparison of the subjects’ performances on two measures of comprehension processing efficiency: a speeded reading comprehension and listening comprehension.

The format of the speeded sentence reading test was almost the same as the ones for Experiment I and II. The key sentences appeared on the video screen as in the previous experiments; the difference was in the form of the answer choices. Previously, the answer choices were in English, but it was felt that presenting these answer choices in the subjects’ L1-Japanese would improve the test since the lexical difficulty of the answer choices and individual differences in
the efficiency of reading the answer choices (as opposed to the efficiency of reading the key sentences) would not influence the subjects' test performance extraneously.

The subjects' listening comprehension abilities were measured through a test format employed in the Test of English for International Communication. For each of the 20 items, the subject was to look at a photograph and choose from four English sentences presented auditorily the one which described the contents of the photograph. The actual items used were derived from Stupak (1995). This listening test format was adopted since it required no visual text processing.

The video text reading and the listening comprehension tests were subjected to KR 20 formula for reliability analyses, and the coefficients of .53 for the reading test and .13 for the listening test were obtained as averages between the pre- and the post-tests (.43 for the pre-test and .63 for the post-test in reading; -.04 for the pre-test and .13 for the post-test in listening). The low value for the listening test means that any results related to the listening test would have to be interpreted conservatively.

The reading and listening test data were submitted to separate repeated-measures ANOVAs (one-within, one-between design) to test for inter-group and pre- and post-test differences. The tests of differences in the score variance between the experimental and the control group had shown a trend towards significance in the reading pre-test (F=.346, p=.0537) and in the listening pre-test (F=.370, p=.0698), but none of the score distributions had significantly differed from the normal distribution. Given the ANOVA's robustness against minor violations of the required conditions, no prior score transformation was judged necessary for the current data set.

**Results and Discussion**

The descriptive statistics for the video reading test are presented in Table 3.1.1. The experimental group's pre-test mean was almost a full point higher than that of the control group's (11.143 vs. 10.294), but this gap was not statistically significant (df=29, t=.855, NS).

Both groups in this experiment also increased their reading test scores: the control group's mean had increased from 10.294 to 11.059 and the experimental group's from 11.143 to 14.071, which means the inter-group gap has widened to 3.012.

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<td>ctrl, read-pre</td>
<td>17</td>
<td>10.294</td>
<td>2.024</td>
<td>.491</td>
</tr>
<tr>
<td>ctrl, read-post</td>
<td>17</td>
<td>11.059</td>
<td>2.926</td>
<td>.710</td>
</tr>
<tr>
<td>exp, read-pre</td>
<td>14</td>
<td>11.143</td>
<td>3.439</td>
<td>.919</td>
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<tr>
<td>exp, read-post</td>
<td>14</td>
<td>14.071</td>
<td>2.786</td>
<td>.745</td>
</tr>
</tbody>
</table>

Table 3.1.1

This striking increase in the experimental group's mean is confirmed as significant as shown in the ANOVA results in Table 3.1.2 and Figure 3.1. There was a significant main effect for group (F=4.700, p=.0385), a significant main effect for test time (F=13.116, p=.0011), and a significant interaction between group and test time (F=5.012, p=.0330).
Rapid Comprehension in the Japanese EFL Context (2)

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F-value</th>
<th>p-value</th>
</tr>
</thead>
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<tr>
<td>group</td>
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<td>57.235</td>
<td>4.700</td>
<td>.0385</td>
</tr>
<tr>
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<td>353.120</td>
<td>12.177</td>
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<td></td>
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<tr>
<td>read test time</td>
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<td>47.032</td>
<td>47.032</td>
<td>13.116</td>
<td>.0011</td>
</tr>
<tr>
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<td>17.974</td>
<td>17.974</td>
<td>5.012</td>
<td>.0330</td>
</tr>
<tr>
<td>read test time * subject (group)</td>
<td>29</td>
<td>103.994</td>
<td>3.586</td>
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</tbody>
</table>

Table 3.1.2

![Figure 3.1](image)

The significant interaction between group and test time means that the inter-group gap was mediated by test time. Figure 3.1 shows the two lines for the subject groups not intersecting but diverging from each other. It can be inferred from this that the significant interaction resulted since the inter-group gap was small at the time of pre-test but large at the time of post-test. The reading test data thus provide support for the experimental condition.

Table 3.2.1 lists the means for the listening comprehension test. The pre-test scores for the two groups were almost identical (10.647 for the control group and 10.643 for the experimental group) and was confirmed not significantly different (df=29, t=.007, NS). While the control group’s increase was only 0.059, the experimental group increased their mean by two points to 12.643, which meant that the experimental group was roughly two points above the control group at the time of post-test.

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>mean</th>
<th>sd</th>
<th>se</th>
</tr>
</thead>
<tbody>
<tr>
<td>ctrl, listen-pre</td>
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<td>10.647</td>
<td>1.320</td>
<td>.320</td>
</tr>
<tr>
<td>ctrl, listen-post</td>
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<td>10.706</td>
<td>2.054</td>
<td>.498</td>
</tr>
<tr>
<td>exp, listen-pre</td>
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<td>10.643</td>
<td>2.170</td>
<td>.580</td>
</tr>
<tr>
<td>exp, listen-post</td>
<td>14</td>
<td>12.643</td>
<td>1.598</td>
<td>.427</td>
</tr>
</tbody>
</table>

Table 3.2.1

The ANOVA results for the listening test are presented in Table 3.2.2. There was a significant
main effect for test time (F=6.615, p=.0155) and a significant interaction between group and test time (F=7.054, p=.0127). Figure 3.2 graphically displays the changes in the means for the two groups.

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
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<td>4.496</td>
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<tr>
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<td>13.565</td>
<td>6.615</td>
<td>.0155</td>
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<tr>
<td>listen test time * group</td>
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<td>14.465</td>
<td>14.465</td>
<td>7.054</td>
<td>.0127</td>
</tr>
<tr>
<td>listen test time * subject (group)</td>
<td>29</td>
<td>59.471</td>
<td>2.051</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3.2.2

![Graph showing changes in means for two groups](image)

Figure 3.2

It is recalled that a significant interaction indicates that the inter-group gap was mediated by test time. Figure 3.2 shows the two lines for the subject groups originating at almost the same point but diverging at the time of post-test. It is thus inferred for the listening test again that the significant interaction was due to inter-group similarity at the time of pre-test and the presence of a large enough gap at the time of post-test. The listening test data thus lend further support for the experimental condition.

The positive results from both the video text reading and listening tests enable us to answer the research question positively. With regard to the effects of video text reading training on the subjects’ listening comprehension efficiency, it appears that the training does have a positive effect.

**General Discussion and Conclusion**

The general purpose of the research reported in this paper was to explore whether video-based speed reading training could influence the Japanese EFL learner’s comprehension efficiency.

The first two experiments began by evaluating the gain in the learner’s visual text comprehension efficiency as a function of the speed reading training. In the first experiment, the group
of learners who received visual processing training once a week for five weeks did improve their test scores. In the second experiment, those who received the same kind of training everyday for five straight days showed improvement as well. In both experiments, however, the control group also improved, though not to the same extent. This made the interpretation of the results difficult. Another aspect which undermined the first two experiments was the non-trivial inter-group ability differences at the outset. It would have led to a clearer conclusion if the experimental and the control groups had been balanced in terms of their initial abilities, but it was not possible to achieve such a condition due to the quasi-experimental nature of the experiments, i.e., since the experiments made use of intact classes. The first two experiments were thus unable to categorically answer whether the training would help improve the learners’ comprehension efficiency. Nonetheless, the general increase in the subjects’ comprehension performance seemed to justify more research on this topic, perhaps with refined research design.

The last of the three experiments measured the effects of visual text processing practices on auditory language comprehension efficiency and thereby sought to clarify whether the gain in the video reading test scores were merely a product of the increased familiarity with video-medium text presentation paradigm or reflecting true internal change in the learners general L2 comprehension efficiency. In both video-based sentence reading test scores and listening comprehension test scores, only those who received the rapid reading training via the video presentation showed noticeable improvement. Therefore, the experiment provided support for the effects of the video-based speed reading practice and demonstrated that getting used to the text on video had not been the principal cause of the increased reading scores. One point worthy of mention, however, is the low internal consistency value obtained for the listening test (KR20=.13). Such a low reliability of measurement prohibits us from making strong claims about the training procedure. In fact, given the small sample size and short duration of the experiment, the results reported here must be regarded rather tentative.

This paper has followed up on a theoretical discussion presented in Shiotsu (1997) and presented a summary of three original experiments which evaluated the effects of a rapid processing training. While several methodological limitations have caused difficulties in interpreting the data obtained, the results have been generally encouraging. Qualitative and quantitative improvement in this sort of research must follow in order to help accumulate empirical evidence on the human L2 comprehension ability and to better inform the L2 learners as well as the pedagogy.

Notes

Aspects of this paper were presented during the 12th Annual JACET Kyushu-Okinawa Chapter Conference, held in Kurume in October, 1996 and during the JACET 36th Annual Convention, held in Tokyo in September, 1997.

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References


