Modality in prereading: An investigation of intertextuality

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The value of prereading tasks or schema activation activities has been widely attested to in second/foreign language reading research. There has, however, been little research on the modality in which prereading tasks are delivered. This study compared two types of schema activation activity with a control group that received no schema activation. The two types of schema activation were: *read schema activation*, in which students read a whole text related to the target text; and *written schema activation*, in which students wrote what they knew about the topic of the target text. The control group read the target text twice. Subjects were Japanese women college students, who were randomly assigned to groups. Each group received each treatment. There were no significant differences among the groups, suggesting that, with experienced readers such as these, simply reading a text twice may be as valuable as completing a prereading exercise.

INTRODUCTION

Hartman (1992: 304) reminds us, “Any reading event is intricately bound up to a larger dialogue that has preceded and will follow it.” That is, texts get meaning from other texts. Indeed, as Halliday and Hasan (1985: 47) point out, schools are built on the premise of intertextuality, “on a great deal of unspoken cross-reference of which everyone is largely unaware.” We have often neglected the important resource of intertextuality when preparing students to read texts.

Though this approach is under-researched in L2, there has been research in L1 instruction in which students take advantage of intertextuality by reading or writing previews of target texts. Hayes and Tierney (1982) found that reading an article about cricket before reading one about baseball improved comprehension and that reading one article about cricket facilitated comprehension of another. Graves, Cooke and LaBerge (1983) found that reading detailed “previews” or summaries significantly improved comprehension of difficult short stories by low ability junior high school students.

Chen and Graves (1995) extended this line of research to second language students. They tested four conditions: a preview; supplied background knowledge; a combination of preview and supplied background knowledge; and no prereading exercise. The preview introduced the characters and told the story up to its climax. The supplied background knowledge condition provided historical and cultural information as well as definitions of some difficult vocabulary. It was found that providing a preview was more effective than providing background knowledge or no prereading at all. The combination of preview and background information was

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as effective as the preview alone but because the combination took more time both to prepare and to teach, there were questions about its efficiency.

**Extensive reading** is another form of intertextual strategy provided that individual students read books around one theme. A proponent of extensive reading, Krashen (1994) has suggested that students be allowed to preview by first, reading in the L1 material they will read later in L2.

**Writing previews** is another intertextual resource. For L1, Denner and McGinley (1992: 12) found effective a preview activity in which junior high school students wrote before reading. They composed a story based on “clue words and telegraphic phrases that, once assembled, enable the readers to form an overall impression of how characters and events interact within the story.” The act of composing a “story guess” increased recall for both above-and below-average readers. Using language to comprehend language worked.

**METHODOLOGY**

**Overview**

This study compared two modalities or channels of intertextual schema activation, written and read, to a control group that did not receive schema activation. The purpose of this manipulation was to test whether either modality was superior in facilitating reading comprehension, measured by recall of the main ideas of three texts.

Ninety-six Japanese women first-year college students, in three groups, read three texts and then recalled what they read in their L1. Each group experienced each of the three conditions: writing schema activation (WSA); reading schema activation (RSA); and the control condition of reading each text twice. The dependent variable was scores, defined as the total number of idea units remembered; scores were compared using Analysis of Variance (ANOVA) to see if either modality better facilitated comprehension. Following Bernhardt (1983), immediate native language recalls were used to avoid the problems inherent in many other tests of reading comprehension that require target language use in the recall tasks.

**Subjects**

The subjects consisted of ninety-six first-year Japanese women college students at a two-year women’s college in northeastern Japan. They were all enrolled in two sections of Reading 1 and the experiment took place during normal class hours.

The group of ninety-six formed the pool from which the three groups were constituted through random assignment based on student numbers.

All the students had studied English for at least six years and were considered false beginners or lower intermediate students. Because the college uses its own entrance examination, no standardised scores were available for all of the students. All subjects were majoring in *Kokusai Bunka*, which might be translated “international studies” or “cross-cultural studies.” Most of the women came from the surrounding region.

**Materials for this Study**

**Target Texts**

Three target texts were read by each subject. The texts were selected for their appeal to a group majoring in cross-cultural issues. The readings were all from a special issue of *Time* focusing on multi-culturalism. The first reading (Iyer 1993) was an essay about globalization and how countries and cultures are learning from each other and becoming in some ways less distinct. The second reading (Smolarek 1993) discussed the rise in the number of cross-cultural marriages in the United States. The third (Walsh 1993) presented information on Asian-Americans in California, their successes and the challenges they face. Each reading was simplified to be more easily understood by false beginner/intermediate students. The simplification was not just an adjustment of sentence length and of writing style: the cohesion of the text was strengthened and irrelevant or culturally biased material was removed. The rewriting was done by the researcher and the teacher of the subjects for this study. Together, the researcher and teacher based their revision on their knowledge of Japanese students at the lower-intermediate proficiency level; they rewrote separately and arrived at a consensus on their final product. Each of the three passages was given a Raygor Readability Estimate (Gunderson 1991). Though readability estimates are meant for native speakers of English, Gunderson (1991) suggests that Raygor might be a reasonable measure for non-native speakers. These estimates also provided a means to show that the readings were matched in level.

**Reading Schema Activation Texts**

In addition to the target texts, reading schema activation texts were constructed by the researcher and checked for appropriateness by the teacher. Each RSA passage consisted of a letter to Mari from Kaori. Both characters were fictional Japanese women. In each one, Kaori wrote about a topic connected thematically to the target text; however, no content in the RSA text was repeated in the target text. For the first reading, on globalization, Kaori wrote about her trip to Singapore, where she shopped at international shops like The Gap and ate different kinds of food. These themes were taken up again in the target reading, but none of the content was repeated. This letter was at Grade 4 level of the Raygor Readability Estimate.

The second reading, on cross-cultural marriage, was previewed by Kaori’s letter about attending her friend’s cross-cultural wedding in Hawaii. None of the ethnic groups mentioned in the letter were mentioned in the target text. This RSA was on
the border between Grades 4 and 5. The use of Honolulu, Hawaii, as the site of the wedding inflated the number of words of six or more letters, part of the Raygor index.

The third reading, on Asian-Americans in California, was previewed by Kaori’s letter about visiting her second-generation Japanese-American cousin in Seattle. There were two mentions of Japanese-Americans in the target text, one about internment camps during World War II and the other about a Japanese-American doctor. Neither idea was contained in the RSA letter. The RSA was at Grade 3 level of the Raygor Readability Estimate.

Writing Schema Activation Materials

Three prompts, to which students were asked to write responses, were constructed by the researcher and agreed upon with the teacher. Students were free to write ideas and lists. Their writing did not need to be a well-formed paragraph or essay. For the reading on globalization, the prompt was: “Is your life ‘international’? Why or why not?” Students were given examples such as: “Yes, I have a lot of foreign friends.” “No, all of my friends are Japanese.” The reading on cross-cultural marriage was previewed by this prompt: “Would you like to marry a person from a foreign country? Why or why not? Example: We might live in another country.” For the reading on Asian-Americans, the prompt was: “What do you know about Asian Americans? Write down names, places, problems they have, advantages they have, etc.”

Assignment Procedures and Scoring

Students were randomly assigned to groups, based on student numbers. The total pool of ninety-six students constituted the group from which the three groups were formed. Students participated in the experiment in their own reading classes. This was necessary in order to have as many students as possible participate in the study. Scheduling conflicts made it impossible to have all students tested at the same time. However, given that students were randomly assigned, the problem of intact groups was reduced.

The three random groups read each of the three passages and experienced each of the conditions. For example, Group 1 read the first text with WSA, the second text in the Control condition and the third text with RSA.

Written recalls were collected and scored based on the presence of idea units as in Carrell (1985). An idea unit was (a) a main or subordinate clause, (b) a nominalized verb phrase, an infinitive or gerund construction, (c) a conjunct or (d) an optional prepositional phrase. Each idea unit was awarded one point. A native speaker of Japanese checked all scoring and any questions were resolved in discussion.

Researcher construction of the score sheet was checked with a colleague and consensus was reached through discussion in cases of disagreement.

Once points were awarded for presence of idea units, each student received a total score for each reading. Scores for each treatment were compared by an Analysis of Variance (ANOVA).

Data Collection

The teacher read the following script at the beginning of each class.

We’re interested in how students get ready to read. You are going to try different ways to get ready to read. Some of you are doing different things. This reading is about X. Read the instructions and do what they say. Read the article. When you finish, put the paper away. Write, in Japanese, everything that you can remember. If you have any questions, ask me.

The teacher kept a log of questions asked. The instructions the students received on their papers were written in Japanese to minimize any misunderstandings of the tasks involved.

The language of the various tasks was an issue. The rationale for writing the WSA essays in English rather than in Japanese was to control for the effect of L1. If students had been allowed to write in Japanese, it could be argued that L1 was mediating the comprehension. To make WSA equivalent to RSA, both schema activation processes needed to take place in L2.

RESULTS

Administration

The conditions were administered over three class periods during the second half of the 1995-1996 school year. The teacher reported only two problems with the administrations. The first was some students’ difficulty in being told to write “some” sentences in the WSA condition. Students were unclear just how many sentences to write, a reaction that was not anticipated. Appropriate Japanese instructions, according to the teacher, probably would have specified a number of sentences as a minimum requirement. He communicated to the students that their main task was to read and remember and that the writing was a pre-task, like the discussions they regularly had before reading. Each administration of WSA led to an average of only three or four sentences being written.

The second problem was with groupings and mortality. Of the ninety-six students originally enrolled, a total of eighty-nine finally received all three treatments; some did not attend all three days and two joined the wrong group on the last day. Each reading was read by a total of ninety-two students and was analysed separately. The results of the eighty-nine students who had all three treatments were analysed.
to determine if order of presentation of conditions had an effect on scores. The results for each of the three readings will be presented first.

Nature of the Data and Analysis

Before reporting on the results for each reading, it would be useful to recapitulate the nature of the data and how they were analysed. The data were ideas recalled after reading a modified passage. The ideas in a student's written L1 recall were matched against a checklist of ideas found in the reading. "Ideas" were defined as main and subordinate clauses, nominalized verb phrases, conjuncts or optional prepositional phrases (Carrell 1985). The student was awarded one point for each idea recalled and the sum of her points was her score. Since the three readings contained different numbers of ideas, scores were analysed as percentages recalled of the total number of ideas in each reading. Thus, a student recalling twenty-five ideas out of a total of fifty would get a score of 50%. This made it possible for performance on the three readings to be compared.

Results for Reading 1

The results for Reading 1, "Global Village," establish a pattern found across all the readings: low comprehension scores and a good deal of variability among those scores.

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Mean Score(%)</th>
<th>SD</th>
<th>SE</th>
<th>Range(%)</th>
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<tr>
<td>RSA</td>
<td>32</td>
<td>21.9</td>
<td>.120</td>
<td>.021</td>
<td>1.2 - 60.5</td>
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<td>WSA</td>
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<td>.016</td>
<td>7.4 - 35.8</td>
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<tr>
<td>CTL</td>
<td>30</td>
<td>21.4</td>
<td>.099</td>
<td>.018</td>
<td>3.7 - 45.7</td>
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<tr>
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<td>92</td>
<td>20.9</td>
<td>.103</td>
<td>.011</td>
<td>1.2 - 60.5</td>
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</tbody>
</table>

Table 1: Descriptive Statistics, Reading 1

As Table 1 shows, the mean percentage of ideas recalled across the three groups for Reading 1 was 20.9%. That is, students, on average, remembered only about 21% of all the ideas in the reading. The mean percentage of ideas remembered did not differ significantly among the three conditions. The RSA condition recalled 21.9% of the ideas, WSA 19.4% and Control 21.4%. Table 2 shows the results of an Analysis of Variance (ANOVA), indicating no significant differences in effectiveness among the conditions (p = .603).

Given the low percentage of ideas remembered, perhaps it makes sense that the three groups show no differences. As groups, perhaps they were operating at a level of comprehension too low to be successfully differentiated. That is, if a reading is too difficult for students it does not really matter how they prepare for it. However, although the scores seem quite low from the perspective of a classroom teacher, results similar to those found in this study were reported by Carrell (1984). Her subjects recalled 7% to 25% of total ideas. Subjects in Carrell (1985) recalled 28% to 46% of total ideas. Carrell's findings first suggest that the results of this study are not unusual. They also suggest the possibility that studies that analyse recalls based on a count of remembered ideas might necessarily yield low comprehension scores because in such a count details tend to be as important as main ideas. Perhaps a future study could remove this bias by weighting main ideas more heavily in the analysis. Until that study is done, however, low recall scores must be of some concern.

What is evident from Table 1 beyond seemingly poor average comprehension scores is the wide range of scores. The range of all ninety-two scores is from 1.2% to 60.5% of all ideas recalled, with 68% of all scores falling between 10.6% and 31.2%. Only one student scored 60% and there were no other scores above 50%. Among the groups, the RSA condition had the greatest range of scores (1.2%-60.5%) followed by the Control group (3.7%-45.7%). WSA had the smallest range (7.4%-35.8%).

The ranges are important for three reasons. First, as we have already seen, they point to low levels of comprehension, showing that even the best comprehenders remembered relatively little. These results point out a possible mismatch between student L2 proficiency and reading difficulty. Second, the ranges raise issues about student motivation. Third, they suggest the possibility that some students with different goals behaved quite differently on the same task, pointing out that tasks in future research may need modification. We will take up the second two points next.

The wide ranges point out the tremendous variation among an ostensibly homogeneous population of readers. Part of the variation may be explained by differing levels of student motivation. These results raise the question of how seriously some students took the task. Did those who "remembered" only 1.2% of the ideas really comprehend virtually nothing of the text or were they simply not
motivated to write down everything they remembered? The students were not graded on the assignments. Some students may well have done what they perceived as the minimum amount necessary.

Related to student motivation are student goals. All the conditions show wide ranges. In Reading 1, RSA had the widest range, but for Readings 2 and 3 the widest range was in the results for the Control condition. That Control would have a wide range makes sense when one considers the nature of the task: simply reading the passage twice. Some students, particularly in this Control condition but perhaps in others, may well have used their previous training to make their own prereading. An open-ended condition with no specified prereading task invites variability by allowing students to structure the reading experience according to their own goals. Knowing that the goal of academic reading is to remember what they read, they may well have skimmed the first time they read and used the second reading for more careful processing of details. Students, of course, vary in their ability to do this. This interpretation is speculative, but Lynch (1996) argues a similar point in reporting on listening comprehension. He also suggests that repetition of a task may lead to students being more relaxed and thus doing better, which might have increased the scores of the Control group. Follow-up interviews with the subjects would have been necessary to delve more deeply into this issue.

Results for Reading 2

Reading 1 established a pattern of results that was characterised by low rates of comprehension, a high degree of variability in scores and no statistical difference among conditions. Reading 2, “Interracial”, followed the same pattern, though the percentages of recalled ideas increased. As Table 3 shows, the students recalled a higher percentage of ideas in this reading, an average across groups of 28.8% of all the ideas. This is still a rather low level of recall. As Table 4 shows, there was no significant difference among the groups as measured by ANOVA (p=.743). The data were again characterised by a wide range of recall scores, from 3.7% to 55.6% of total ideas, with 68% of the scores between 17.8% and 39.8%. The control group had the widest range, 3.7% to 55.6%.

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<th>F</th>
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<td>.004</td>
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Table 4: Analysis of Variance (ANOVA): Reading 2

Results for Reading 3

The pattern of rather low recall scores, lots of variation and no statistical difference among groups was also evident in Reading 3, “Asian Americans”. Scores for Reading 3 were very similar to Reading 2, with an average across groups of 30% of all ideas. Table 5 shows a range of scores from 4% to 58% of ideas remembered, with 68% of the scores between 18.4% and 41.6%. Table 6 shows that the conditions did not differ significantly (p=.730). The Control group had the widest range, 4.0% to 58.0%.

<table>
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<tr>
<th>Group</th>
<th>n</th>
<th>Mean Score(%)</th>
<th>SD</th>
<th>SE</th>
<th>Range(%)</th>
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<tr>
<td>RSA</td>
<td>29</td>
<td>28.7</td>
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<td>WSA</td>
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<td>CTL</td>
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<tr>
<td>Total</td>
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Table 5: Descriptive Statistics, Reading 3

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<td>Total</td>
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<td>1.22</td>
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Table 6: Analysis of Variance (ANOVA): Reading 3

Order of Presentation and Difficulty of Readings

We have considered the readings separately and looked at their scores and variability. The next question is if the order of presentation of conditions had an impact on the results. At the same time, we tested statistically the comparative effects of the difficulty of the readings on the overall results. The results for both tests are presented in Table 7. Effects for order of presentation of conditions and for difficulty of readings
were tested using an ANOVA. For this analysis, only those 89 students who received all treatments are included.

<table>
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<tr>
<th>Source</th>
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</table>

Table 7: Analysis of Variance (ANOVA): Presentation of Conditions

Table 7 shows no effect for order of conditions (p=.745). The order of presentation of conditions did not affect overall performance across all readings. That is, all groups performed similarly, no matter which condition they received first, second or third. However, performance was not the same across all readings. Scores for Reading 1 were always the lowest and the difference between scores for Reading 1 and the other two readings was significant (p=.000). Why students had consistently more difficulty with Reading 1 is unclear. Perhaps Reading 1 simply was cognitively or linguistically more difficult than the other two readings. On the other hand, perhaps there was a training effect. It is possible that the students were new to the tasks at the beginning and then improved when they became more accustomed to them. Therefore, scores on Reading 1 were lower than scores on Readings 2 and 3.

CONCLUSION

This study began as an investigation into modalities in prereading. Perhaps the most interesting result it presents, however, is the effect on the performance of the Control condition of reading a text twice. The power of prereading has been amply attested to in English as a second language reading research (see Bernhardt 1991 for a summary). However, if the goal of the reading task is to recall ideas, perhaps repeated readings is an effective way to assist comprehension.

The students in this study were not naive readers; this was not their first reading class. Perhaps they had developed and internalised their own prereading strategies. The variability in the data suggests that this might be true for at least some of the students. If the students did use prereading strategies they had previously learned in classes, then the Control condition was simply another sort of prereading condition. There is no way of knowing to what extent students made use of their own prereading strategies since no one was debriefed after reading. A replication of the present study, coupled with some post-reading questions that ask students to reflect on their experience of the task, would help address this question.

Indeed, how students experience tasks is an area that is neglected in research. Wertsch (1995) would argue that using different tools like RSA or WSA leads to different experiences. Different mediational means do not just facilitate an action; they fundamentally change the experience of it. Building a house with power tools is not just easier than building one with hand tools: the fundamental experience is different. Therefore, logically, another step would be to see how students experience their reading when using different pretasks.

Finally, however, the idea of repeated reading itself needs more research in ESL. It takes time and energy to design and teach prereading exercises. If simple re-reading can accomplish the same effect, at least with experienced readers, then teachers may want to reconsider the use of prereading tasks. While it would be premature to call for such a reconsideration now, re-reading instead of prereading is clearly an area for future research.

REFERENCES


Krashen, S.D. (1994, March) *Beyond the input hypothesis*. Plenary address presented at Teachers of English to Speakers of Other Languages Convention, Baltimore, MD.


