The Effects of Text-Structure Awareness on Reading Comprehension of Iranian EFL Learners

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Abstract

This study aimed at determining the relative efficacy of text-structure strategy instruction, compared to that of traditional instruction, on the reading comprehension of Iranian EFL learners. Forty Iranian advanced participants (23 male and 17 female students) participated in this study. They were divided into 2 groups including a control group and an experimental group. To choose advanced language students with no statistically significant differences in reading skill and no text-structure knowledge, both groups were pretested with an Oxford Placement Test (OPT), a text-structure knowledge test, and the reading section of TOEFL, respectively. Then, during 4 weeks, the students in both groups were taught reading comprehension through 4 passages. The students in the control group were taught traditionally and the students in the experimental group were taught through text-structure awareness instruction. At the end of the fourth week, the students were post-tested to determine the effects of the intervention program. The results revealed that the reading comprehension of both groups improved significantly; however, the text-structure awareness instruction group outperformed the traditional instruction group significantly.

Keywords: Reading comprehension, Text-structure, Expository text, Awareness raising

1. Introduction

The ability to read in a second language (L2) is one of the most important skills that should be improved in academic settings. It is also one of the most
difficult skills to develop to a high level of proficiency. Reading is an essential skill and probably the most important skill for L2 learners to master in academic contexts. Because reading comprehension has been distinctively important both in first and second/foreign languages, reading strategies are of great interest in the field of reading research. A large number of research studies have shown that skilled readers use a variety of strategies to comprehend the texts (Stanovich, 2000; Sweet & Snow, 2003).

The question is how teachers can teach students reading strategies. Because many readers are not aware of reading strategies, there is a need to devote special attention to teach these strategies explicitly. In fact, in most English reading classes, especially in Iran, teaching comprehension strategies to readers are ignored. The strategies used are mostly finding the meaning of the unknown vocabularies, teaching grammatical rules, and sometimes translating the texts into students’ native language. This traditional approach only enables the students to comprehend the passage partially. Reading researchers believe that readers’ awareness of different kinds of text structure is a useful strategy for better comprehension (Pearson & Duke, 2002). All texts have certain styles of writing, which not only distinguish them from other types of texts, but also are of great help in conveying the authors’ messages and recalling the texts. The special structures of expository texts include main ideas, events and results, compare and contrast, and problem and solution text-structures (Meyer & Freedle, 1984). Discourse or text structures can be understood as knowledge structures or basic rhetorical patterns in texts. Discourse structure shaves functional purposes and these purposes are recognized by good readers and writers (Grabe, 2002).

2. Literature Review

Text structure refers to how the information within a written text is organized. It helps students understand that a text might present a main idea and details, a cause and then its effects, and/or different views of a topic. According to Ornstein (1994), text structure is the main idea of the text, information organization, as well as the verbal and textual cues which bring unity to the text. Meyer and Rice (1982) defined text structure as the ideas of a text which are interrelated to convey a message to the reader. Other terms such as discourse structure, discourse pattern, text type, rhetorical organization, and top-level structure are sometimes used interchangeably with text structure (Jiang & Grabe, 2007).

Expository texts are texts that are used by the authors to give information, explain, describe, or persuade. In short, most academic contents are presented in expository texts (Gaddy, 2008). Meyer and Freedle (1984) and Tompkins (2007) have organized five basic expository text structures: descriptive, sequential, causation, problem/solution, and comparison.
A major issue concerning the influence of text structure, according to Grab (2002), is the extent to which such knowledge can be directly taught to students so that it will lead to improved comprehension. There are three major lines of research on the effect of text-structure instruction. One line of research involves the impact of direct instruction, which explicitly raises student awareness of specific text structuring (Carrell, 1985; Duke & Pearson, 2002). It emphasizes the use of transition words, topic sentences, sentence-initial phrases, anaphoric linkages and definite reference to prior text ideas, and the role of various grammatical structures to build coherence in texts. The second line of research develops student awareness of text structure through graphic organizers, semantic maps, outline grids, tree diagrams, and hierarchical summaries (Alvermann, 1986; Vacca, 2002). Based on Grab (2002), when graphic organizers are used on a regular basis, students consistently demonstrate significant improvement in their reading comprehension with academic expository texts. The third line of instructional training originates from instruction in reading strategies. Because a number of reading strategy training approaches includes attention to structure, main idea identification, and text study skills, this line of instructional research is a source of studies supporting text structure instruction. Thus, strategy training which includes summarizing, semantic mapping, predicting, forming questions from headings and subheadings, and using adjunct questions, all appear to improve awareness of text structure and text comprehension (Block & Pressley, 2002).

All three lines of research argue that instruction, which focuses on text structure, increases comprehension and learning. Grabe (2002) claimed that these three research trends also indirectly argue that texts provide guidelines for the construction of the reader’s comprehension. Teaching students to recognize common text structures can help them monitor their comprehension.

ESL and EFL students need special attention in reading development, especially those who wish to follow academic purposes in their L2. Meyer (1999) believes that it is the structure of the text which makes it different from list of words. Koda (2005) believes that EFL/ESL reading teachers should provide their students with a preview about the text and the topic rather than merely asking the students to read the texts. Carrel (1985) demonstrated that training students to recognize the organizational structure of texts improved students’ abilities to recall information. Moreover, Roller and Schreiner (1985) examined the effects of the utilization of narrative and expository organizational instruction on sixth-grade children’s comprehension of prose. The researchers found that those who were taught by the organizational instruction wrote better summaries than the children who received traditional instruction.

Armbruster, Anderson, and Ostertag (1987) examined the effect of text-structure training on fifth grade L1 students’ comprehension of social studies material. A structure-training group received direct instruction in recognizing
and summarizing a problem/solution text along with a schematic representation called frame in which a traditional training group read and discussed answers to questions about social study passages. Compared to the traditional training students, the structure-trained students recalled about 50% more of the macrostructure ideas. This indicates that the training was effective for all high, mid, and lowability students. Pehrsson and Denner (1987) reviewed research on the effects of text structures in reading, children’s awareness of text structure, and the effects of training in text structures. They concluded that knowledge of text structures improves students’ reading comprehension. León and Carretero (1995) created a program to improve knowledge and use of Spanish text structure as a comprehension strategy, and conducted this program twice with 33 high school Spanish students. The results indicated that this program helped the students improve their comprehension.

EFL learners in Iran suffer from lack of enough vocabulary knowledge and tacit knowledge of grammar, so they need additional instruction in building a foundation of structural knowledge and text organization for more effective reading comprehension. A major issue concerning the influence of text structure is the extent to which such knowledge can be directly taught to students so that it could improve comprehension. There are a number of studies which show the effects of text-structures and book discussion, but there are few studies on the effects of text-structure awareness on reading comprehension. Amoli and Karbalaei (2011) conducted a study to explore how underlining strategy training can be implemented most effectively in Iranian universities to improve EFL students’ reading comprehension. The result showed that the underlining strategy that were engaged to facilitate Iranian university learners’ EFL reading comprehension was a strong achievement level effect on the reading comprehension outcomes. Vahidi (2008) examined the discourse knowledge of paragraph structure and the comprehension of academic/expository text. The results of his study revealed that there was a relationship between knowledge of text integration and text comprehension. To the best knowledge of the present researchers, the number of studies which compare traditional instruction of reading comprehension with text-structure awareness instruction and their effects on reading comprehension skill in Iran isscant. Thus, this study was conducted to compare the reading comprehension performances of Iranian advanced students who were taught reading comprehension traditionally with those who were taught text-structure instruction explicitly. In this vein, this study was designed to investigate the following research questions:

1. Does the group that received text-structure awareness instruction show a significant improvement in the reading comprehension skill over time?
2. Does the group that received traditional instruction show a significant improvement in the reading comprehension skill over time?
3. Is there any significant difference in the effect of text-structure awareness instruction and traditional instruction on the reading comprehension skills?

3. Method

This study was conducted in Novin Sadra Language Institute in Isfahan, Iran. The courses were taught using the communicative approach and covered the four skills of listening, speaking, reading, and writing with a focus on grammar section. Each class was taught by an Iranian EFL teacher and lasted 1 hour and 30 minutes per session.

3.1. Participants

The participants were 46 Iranian EFL learners. The Oxford Placement Test (2004) of English Language Proficiency consisting of two sections on Listening Test and Grammar Test (each of 200) items was administered to determine their level of English proficiency. Forty students whose scores were between 150 and 169 in the OPT test were selected for this study as the advanced students who were all the native Persian speakers. The students were from various educational backgrounds. There were 23 males and 17 females with the mean age of 20 and 22, respectively. The participants were assigned into two groups randomly: 20 students in text-structure awareness group (group A), and 20 students in traditional instruction group (group B). Group A was an experimental group and was taught reading through direct instruction of text structures. Group B was a control group and was taught reading, traditionally, without instruction of text structures.

3.2. Materials

The text-structure pretest was administered to all the participants before going through grouping procedures and the relevant courses of instruction; it contained a passage adapted from the book Step up to IELTS written by Jakeman and McDowell (1997).

Fifty multiple-choice item test based on five short reading passages (150 to 300 words) taken from a variety of TOEFL texts was also administered. This test was used to measure students' comprehension ability to determine their reading comprehension ability before starting the program.

Reading passages were four expository texts from Summit written by Saslow and Ascher (2006), the book for advanced level students in the institute. The book Summit was taught through the communicative approach. The book covers all the skills of listening, speaking, reading, and writing with the focus on grammar section.
After the text structure knowledge test, the participants were randomly assigned to two groups, 40 students (20 in each group) who had already been placed at the advanced levels of English proficiency. Then, they were pretested on their reading comprehension abilities. TRT (TOEFL Reading Test) is a standardized test used in measuring students' comprehension ability. The expository texts in the test were scientific and similar to those seen in passages in students’ books. The pretest scores indicated the ability of students' reading comprehension before treatment.

3.3. Procedure

After the students were pretested, the teacher taught four similar text passages to the participants in both groups. Students in group A (the experimental group) were taught expository text structure explicitly. In addition, the teacher taught them grammatical rules and new vocabularies. The students in group B (the control group) read the text each session and the teacher explained the grammatical rules and the new vocabularies to them. In other words, the treatment was applied to the experimental group, whereas the control group followed the traditional instruction. During the course of treatment, the students got aware of issues such as topic and topic sentence. They were also taught different methods of paragraph development including details, exemplification, illustration, cause-effect, description, comparison-contrast, classification, and definition. Considering the nature of these methods, each of them was accompanied with analysis and discussion of two or more sample paragraphs. This procedure was used to help them have practice on what they had already learned. For example, in text-structure strategies for main idea, they were asked to underline the main idea and then write the important concepts that explained the main idea, and for text-structure strategies for comparison, they were asked to underline the two primary ideas, and then write what was similar or different about the two ideas.

3.4. Data Analysis Procedure

After collecting the data, the data entered into SPSS (version 20). Prior to conducting the study, an independent sample \( t \) test was run on the two groups’ pretest scores to ensure that the two groups were not significantly different. After the study was completed, to answer the questions, a two paired sample \( t \) test was used to compare the means of both groups’ pretest and posttest scores separately to analyze the two groups’ gains over time. Moreover, to address the third research question an independent samples \( t \) test was used to compare the two groups’ posttest scores to analyze whether the two groups performed significantly different, and if so, which group performed better compared to the other one.
4. Results

The two groups of students were pretested during their first week to evaluate their reading comprehension ability before the treatment. Table 1 shows the means, standard deviations, and standard error of the means of the two groups on the pretest:

<table>
<thead>
<tr>
<th>Groups</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group (CG)</td>
<td>20</td>
<td>27.1</td>
<td>3.538</td>
<td>.791</td>
</tr>
<tr>
<td>Experimental Group (EG)</td>
<td>20</td>
<td>28.05</td>
<td>4.383</td>
<td>.98</td>
</tr>
</tbody>
</table>

As demonstrated in Table 1, the number of the students in the control and experimental groups were equal (20 students in each group). To compare these two means (27.1, 28.05), the null hypothesis ($H_0$) and the nondirectional alternative ($H_1$) hypothesis were set, and a $t$ test was used to test these hypotheses. The null hypothesis assumed that the pretest mean scores of the two groups were not different. This hypothesis was tested against the nondirectional alternative hypothesis that assumed the mean score of the experimental group was different from that of the control group. The level of significance for testing these hypotheses was set at .05. That is, if the null hypothesis was rejected, the nondirectional alternative hypothesis would be accepted, and the probability that a difference in sample means would have occurred by chance if the level of significance was less than the set value ($p < .05$). The level of significance was not set at .01. Table 2 shows the results for testing these hypotheses.

<table>
<thead>
<tr>
<th></th>
<th>Levene's Test for Equality of Variances</th>
<th>$t$ Test for Equality of Means</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
<td>t</td>
</tr>
<tr>
<td>Pretest</td>
<td></td>
<td></td>
<td>.754</td>
</tr>
<tr>
<td>EVNA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

_EVA: Equal Variances Assumed  
_EVNA: Equal Variances Not Assumed  

After the participants were posttested, a Paired Sample $t$ test was run to check whether the experimental group performed significantly differently on the posttest. Table 3 shows the descriptive statistics for the experimental group:
Table 3. Descriptive Statistics for the Experimental Group

<table>
<thead>
<tr>
<th>Tests</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest of EG</td>
<td>20</td>
<td>28.05</td>
<td>4.382</td>
<td>68.98</td>
</tr>
<tr>
<td>Posttest of EG</td>
<td>20</td>
<td>34.45</td>
<td>3.179</td>
<td>88.88</td>
</tr>
</tbody>
</table>

Table 3 shows that the mean score of the experimental group on the pretest was 28.05, whereas the average score of the experimental group in posttest changed to 34.45. Thus, the average score of the experimental group in posttest was higher than the average score of this group in pretest. As Table 4 displays, the difference of the two means is -6.4, (28.05 - 34.45). The t value in this test was -9.718. The level of significance, .0, was smaller than the set value (.05). Thus, mean score of the experimental group in posttest ($M = 34.45, SD = 3.17$) was significantly higher than the mean score of the experimental group in pretest ($M = 28.05, SD = 4.38$; $t(19) = -9.718, p < .05$). Moreover, the $t$ value (observed $t$) was greater than the critical $t(9.718 > 2.08)$ and it was in line with the previous results.

Table 4. Paired Sample t Test for Experimental Group

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
<td>Upper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>-6.42</td>
<td>.94511</td>
<td>.65855</td>
<td>-7.77835</td>
<td>-5.02165</td>
<td>-9.718</td>
<td>19.00</td>
</tr>
<tr>
<td>Posttest</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Another Paired Sample $t$ test was run to check whether the control group performed significantly differently on the posttest. Table 5 shows the descriptive statistics for the control group.

Table 5. Descriptive Statistics for the Control Group

<table>
<thead>
<tr>
<th>Tests</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest of EG</td>
<td>20</td>
<td>27.1</td>
<td>3.5377</td>
<td>7.9107</td>
</tr>
<tr>
<td>Posttest of EG</td>
<td>20</td>
<td>30.6</td>
<td>3.4089</td>
<td>7.76227</td>
</tr>
</tbody>
</table>

Table 5 shows that the average score of the control group in pretest was 27.1, while the average score of the control group in posttest changed to 30.6. Thus, the average score of the control group in posttest was higher than the average score of this group in pretest. As Table 6 displays, the control group performed significantly better on the posttest.
As Table 6 displays, the difference of the two means is -3.5 (27.1  -30.6). The \( t \) value in this test was -9.372. The level of significance, .00, was smaller than the set value (.05). Thus, the mean score of the control group in posttest (\( M = 30.6, \ SD = 3.40897 \)) was significantly higher than the mean score of the control group in pretest (\( M = 27.1, \ SD = 3.53; \ t (19) = -9.37, \ p < .05 \)). Moreover, the \( t \)-value (observed \( t \)) was greater than the critical \( t \) (9.37 > 2.08) and it was in line with the previous results.

An Independent Sample \( t \) test was run to check whether the experimental group performed significantly better than the control group on the posttest. Table 7 shows the descriptive statistics for both experimental and control group.

As demonstrated in Table 7, the mean score of the control group after the treatment changed to 30.6, whereas for the experimental group it was 34.45. Table 8 shows the difference of the two means, -3.85 (30.6  - 34.45). The \( t \)-value was -3.286. The level of significance, .002, was smaller than the set value (.05). Thus, the mean score of the experimental group in posttest (\( M = 34.45, \ SD = 3.97; \ t (19) = -3.28, \ p < .05 \)) was significantly higher than the mean score of the control group in posttest (\( M = 30.6, \ SD = 3.408 \)).

### Table 6. Paired Sample t Test for the Control Group

<table>
<thead>
<tr>
<th>Tests</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>-3.5</td>
<td>1.67017</td>
<td>.37346</td>
<td>-4.28166 -2.71834</td>
<td>-9.372</td>
<td>19</td>
<td>.00</td>
</tr>
<tr>
<td>Posttest</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 7. Descriptive Statistics of the Experimental and Control Groups

<table>
<thead>
<tr>
<th>Tests</th>
<th>Number</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest of EG</td>
<td>20</td>
<td>30.6</td>
<td>3.4089</td>
<td>7.76227</td>
</tr>
<tr>
<td>Posttest of EG</td>
<td>20</td>
<td>34.45</td>
<td>3.979</td>
<td>88.88993</td>
</tr>
</tbody>
</table>
Table 8. Independent Sample t Test for the Experimental and Control Groups (Posttest)

<table>
<thead>
<tr>
<th></th>
<th>Levene's Test for Equality of Variances</th>
<th>t Test for Equality of Means</th>
<th>95% Confidence Interval of the diff</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
<td>t</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Posttest</td>
<td>EVA</td>
<td>.296</td>
<td>.589</td>
</tr>
</tbody>
</table>

Figure 1 shows the performances of both experimental and control groups before and after the intervention. As shown in Figure 1, the mean scores of the experimental and control groups were not significantly different. After the intervention, the mean scores of both groups significantly changed. However, the mean score of the experimental group changed significantly more than the mean score of the control group.

![Figure 1. Performances of the experimental and control groups.](image)

5. Conclusion

The first research question of this study investigated whether teaching knowledge of text structure in the L2 reading class improved the comprehension abilities of the learners. As demonstrated in the results section, the difference between the mean scores of the experimental group in pretest and posttest was significant. The results showed that the students who received text-structure awareness instruction showed a significant improvement in the reading comprehension skill over time. The results of this study are in line with the findings of Carrel (1985) who presented that training students to recognize the organizational structure of texts improved the students’ abilities to recall information. The findings of the study are also in line with Pehrsson and Denner (1987) who reviewed research on the effects of text structures in reading, children’s awareness of text structure, and the effects of training in
text structures. They concluded that knowledge of text structures improves students’ reading comprehension. The results also support Vahidi’s (2008) findings that there is a relationship between knowledge of text integration and text comprehension. The second research question investigated whether reading comprehension of students who were in the control group and were taught traditionally improved significantly. The mean score of the control group in posttest was significantly higher than their mean score in pretest. The results showed that the students who received the traditional instruction had a significant improvement in the reading comprehension skill over time. The results of the study are in contrast with the claim of Roller and Schreiner (1985) that students, who are not aware of text structure, will not be able to use the comprehension strategy while reading and the chance of being fully comprehended will be decreased.

The third question of this study aimed to compare the results of both experimental and control groups to see which of these two performed better on the reading comprehension tasks. The mean score of the experimental group in posttest was significantly higher than the mean score of the control group in pretest. The results showed that the students who received the text-structure instruction explicitly had a significant improvement in the reading comprehension skill over the students who were taught traditionally. The findings support the findings of Roller and Schreiner (1985) who examined the effects of the utilization of narrative and expository organizational instruction on sixth-grade children’s comprehension of prose. They found that those who were taught by the organizational instruction wrote better summaries than those who received traditional instruction. These findings are also in line with the findings of Armbruster, Anderson, and Ostertag (1987) who examined the effect of text structure training on students’ comprehension of social studies material. A structure-training group received direct instruction in recognizing and summarizing a problem/solution text along with a schematic representation called frame in which a traditional training group read and discussed answers to questions about social study passages. Compared to the traditional training students, the structure-trained students recalled about 50% more of the macrostructure ideas. This shows that the training was effective for all high-ability, medium-ability, and low-ability students.

To summarize, reading comprehension is one of the most important skills in L2 classrooms. Reading leads to understanding of new vocabularies, idioms, and grammatical points. Moreover, lack of knowledge of reading comprehension causes students to lose their self-esteem and motivation. The goal of this study was to find out whether teaching reading through text-structure awareness was more effective than traditional ways of teaching reading comprehension to Iranian L2 learners. The results showed that text-structure awareness as a cognitive strategy helped the students improve their reading comprehension abilities. The findings might have practical
implications for reading instruction in Iran. It can benefit both syllabus designers and teachers or practitioners in the field to rethink syllabus design and the instructional process to enable students in the development of their reading skill. For example, English teachers could offer direct explanation of the processes and steps involved in reading strategically and constructively. Moreover, by teaching text-structure awareness, teachers could help students change their learning styles from a dependent to an independent style. The use of text-structure awareness in comprehension instruction can have many benefits. It can be a strong foundation for speaking, writing activities, and assignments, for using the relevant information from texts and other sources more effectively. Students can have a better idea of the information to be used and how the information can be organized in their own work. Students can also learn vocabulary better and be able to carry out more complex post reading activities. Moreover, text-structure awareness can provide an important foundation for content-based and task-based instruction. It can provide ways to maintain more complex sets of information and make accurate comparisons and syntheses across related sources of information on a theme. It is hoped that this study could open new avenues for further research on reading comprehension and pave the way for Iranian EFL learners.

6. References


