The Impact of Formal Instruction of References and Conjunctions on Reading Comprehension of Iranian ESP Students

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Abstract

This study was an attempt to determine the impact of formal instruction of references and conjunctions on reading comprehension of Iranian ESP students. To do so, 72 male and female sophomores majoring in computer sciences were selected randomly from two classes at Shabestar Azad University, each class consisting of 36 students. To make sure of their homogeneity, CELT (Comprehensive English Language Test) was administered to the classes. Then, they were assigned into experimental and control groups. Afterwards, a pre-test was administered to the groups. The experimental group received formal instruction including activities to help them recognize references such as (pronouns,) and functions of conjunctions such as (therefore,), while the control group received no treatment. Following the instruction, a post-test was administered to the groups. The statistical analyses indicated that the participants in the experimental group outperformed the participants in the control group on reading comprehension tests, suggesting that there is a positive relationship between formal instruction of references and conjunctions and reading comprehension ability of Iranian ESP students.

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Keywords: Reading comprehension, discourse analysis, ESP, cohesive ties;

1. Introduction

Along with the developments in the field of humanities in general, and language teaching in particular, ESP as an
approach to teaching courses like English for the students of physics, engineering, etc. has run its way of progress after World War II. Nowadays ESP which is based on learner needs, interests and motivations is exercised everywhere in the world as an independent field and has its own proponents. A majority of graduates and undergraduates are now compelled to learn English since it is the key language to the international currencies of science, technology and commerce.

The main purpose of such learning for the students having specific purposes is to acquire the ability to read the appropriate related literature and also scientific manuals in their own fields. To establish such a reading ability, material developers and text designers have prepared different kinds of textbooks for ESP students in their field of study; the quality and suitability of reading materials have always been under examination different interested investigators, among whom are the pragmatic scholars. These scholars define competence in reading skill, which ESP students need to be equipped with while dealing with written pieces of discourse as “the ability of language users to pair sentences with the contexts in which they would be appropriate” (Levinson 1983: 24). In other words, students should have the ability to relate the sentences in the context and thereby get the meaning as precisely as possible. “In order to understand a text a reader should be able to distinguish a text from a piece of language which is not text. Sentences in a text are not put together haphazardly, but they possess unification and unity which is called texture” (Halliday & Hasan, 1976:5). The cited authors believe that “if a passage of English containing more than one sentence is perceived as a text, there will be certain linguistic features present in that passage which can be identified as contributing to its total unity and giving it texture.”(p. 2). Therefore, it seems that if a reader is able to figure out these features in a text, his task of comprehending will be facilitated. Demel (1990) believes that L2 readers who are able to identify cohesive ties are able to understand the passage better than those who remember only a collection of details.

Several studies have been done in order to find out the effect of formal instruction of conjunctions and references on reading comprehension of students. Research findings show that the presence of discourse markers makes it easy to comprehend a text. Most of the studies conducted have manipulated the text by adding or omitting discourse markers and examined the effect of the presence or absence of discourse markers on the reading comprehension. Khatib (2011) studied the relationship between knowledge of discourse markers and reading comprehension. He concluded that there is a high correlation between students' knowledge of DMs and their reading ability. Bahrami (1992) also studied the effect of the number of discourse markers in the texts on students' reading comprehension. He concluded that the group who took the test with the greatest number of DMs outperformed the other two groups. Akbarian (1998) examined the comprehension level of two groups with the same language ability, reading two versions of the same texts (original and manipulated ones whose DMs were deleted). The subjects who had the original texts, from which no DMs had been omitted, performed better. Innajih (2007) investigated the effect of explicit instruction of DMs on the reading comprehension of the second language learners. The participants in the treatment group were explicitly taught DMs types and their relation to reading comprehension for three months before they took the reading test. The results showed that the treatment group outperformed the control group on the reading test. Finally, Stoodt (1972, as cited in Innajih, 2007), found a significant relationship between reading comprehension and the comprehension of discourse markers.

In discourse comprehension, the ESP students may be faced with the texts, which contain cohesive relationships, and their lack of knowledge about cohesive ties may hinder their interpretation and comprehension of the text. As we observed in literature, the emphasis in reading discussions was mostly on the linguistic side of the phenomena on the one hand, and mental process on the other. But after years of practice and application of these principles in reading courses it has been revealed that practitioners are still far from the stated objectives. Even though the ultimate goal of teaching and learning English for ESP students is to enable the students to read the original materials in the field, they are very far from the end after graduation. When asked for the reason, the students complain that they cannot understand the text other than those, which have been scrutinized by their teachers in the classroom; that their teachers emphasize on the vocabulary and grammatical structures of the text, while their problem is not with the vocabulary or structure but with the overall comprehension of the texts. In short, our students do not know where to look when they cannot understand a piece of written text. An important issue, then, is the cohesive ties which have been found to be problematic for EFL readers (Zamel, 1983). Among cohesive devices references have a major contribution to textual cohesion in English, and as Cook (1989) states, many comprehension difficulties arise from the difficulties students have in interpreting the meaning of referring expressions within sentences. In this case, Selinker and Trimble (1974 as cited in Carrel, Devine, and Eskey, 1988: 152-153) carried out a detailed study into the use of vocabulary in ESP and reported, “students' difficulties in ESP
were not merely a result of technical vocabulary. In fact, non-technical words in technical writing would sometimes
give students more difficulty than technical ones—e.g., adverbial phrases, conjunctions, or words used in anaphoric
reference”. However, although ESP readers' different language problems has so far been of interest to many
researchers, little attention has ever been paid to the effect of formal instruction of references and conjunctions on
reading comprehension. Therefore, this study attempted to shed some light on this issue. To do so, the present study
sought answers to the following question:

Does any significant change appear in the ESP students’ reading ability due to received instruction on cohesive
relations of references and conjunctions?

Accordingly, the following null hypothesis was suggested:

There is no relationship between the impact of received instruction on cohesive relations of reference and
conjunction and ESP students’ reading ability.

2. Methodology

2.1. Participants
Seventy two male and female sophomore students of two classes studying computer sciences at Shabestar Azad
University constituted the participants of this study, each consisting of 36 students. In order to be sure of their
homogeneity, a general language proficiency test, that is, CELT (Comprehensive English Language Test) was
administered into groups. The results of the test indicated no statistically significant difference between the two
groups in terms of language proficiency. Therefore, one group was considered as the control group and the other one
as the experimental group.

2.2. Instruments
The instruments utilized in this study included a language proficiency test, a pre-test, and a post-test. The language
proficiency test was a valid and standardized general proficiency test called CELT. The test consisted of three
sections: structure section including 75 items, vocabulary section including 75 items, and reading comprehension
section containing 25 items. All the items were in multiple-choice format. The pre-test was a reading comprehension
test the content of which was selected from passages included in the subjects' course of specialty. 30 multiple-choice
questions were developed on the basis of references and conjunctions used in the text. In order to come up with a
well-formed test, a pilot study was conducted with 30 students of computer sciences who did not take part in the
main study and the items with facility indexes of above .63 and below .37 were discarded from the test. As a result,
20 well-formed items were included in the pre-test. The post test was a reading comprehension test of nearly the
same readability level as that of the pre-test. The criteria for developing the post-test were the same as those of the
pre-test.

2.3. Procedure
First, the CELT was administered to 72 sophomore computer students. The allotted time was 104 minutes and
correct answer to each item received one point. There was no penalty for false responses. Second, the pre-test, was
administered to the groups. The items of this test were developed in such a way that they tested conjunctions and
references. Third, in the process of treatment the students were asked to highlight and underline the references and
conjunctions which were in the text. The following items detail the steps taken:

1. The students were asked to find the references as well as their referents.

2. Some of the references were written on the blackboard and the students were asked to substitute them for the
words in the passage given to them.
3. Some separate sentences were given to the students and they were asked to combine the sentences by using appropriate references and conjunctions.

4. Some short paragraphs of the texts were chosen and written down on the blackboard without their references and conjunctions, putting blanks instead of them. Then, students were asked to fill in the blanks with appropriate references and conjunctions.

5. The function of each conjunction used in the text was explained and exemplified.

Finally, a multiple-choice reading comprehension test was administered as the post-test to both of the groups.

2.4. Design

The research work took place within the framework of intact pretest-posttest group study.

2.5. Data Analysis

Different statistical procedures were employed to answer the research question as follows: First, a t-test was used to test the significance of the differences among the mean scores of the two groups on the CELT so as to determine the homogeneity of the two groups. Second, a t-test was run to test the significance of the differences among the mean scores of the two groups on the pretest. Third, a t-test was utilized to test the significance of the differences among the mean scores of the two groups on the posttest. Fourth, two t-tests were run to compare the mean scores of the pretest and posttest for each group. Fifth, in order to exclude the individual differences, again the same scores were used. The main focus of this study was to investigate whether the formal instruction of references and conjunctions would affect reading comprehension of ESP students. The statistical procedures exploited are tabulated as follows:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>t-value</th>
<th>D.F</th>
<th>2-tail Sig</th>
<th>t-critical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>64.3611</td>
<td>30.100</td>
<td>1.08</td>
<td>35</td>
<td>0.289</td>
<td>2.021</td>
</tr>
<tr>
<td>Group 2</td>
<td>64.0556</td>
<td>29.782</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As the results in Table 1 show that the t-observed has not exceeded the t-critical suggesting that there was no statistically significant difference between the two groups meaning that the two groups were homogeneous in terms of language proficiency.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>t-value</th>
<th>D.F</th>
<th>2-tail Sig</th>
<th>t-critical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest control G.</td>
<td>10.7500</td>
<td>2.130</td>
<td>1.85</td>
<td>35</td>
<td>.073</td>
<td>2.021</td>
</tr>
<tr>
<td>Pretest exp. G.</td>
<td>10.5278</td>
<td>1.874</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results in Table 2 show that the t-observed did not exceed the t-critical. In other words, there was no statistically significant difference between the performances of the students in control and experimental groups on the pretest.
Table 3. The percentages of the two groups in terms of their performance on the post-test

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>t-value</th>
<th>D.F</th>
<th>2-tail Sig</th>
<th>t-critical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posttest control G.</td>
<td>10.833</td>
<td>2.131</td>
<td>-3.51</td>
<td>35</td>
<td>.001</td>
<td>2.021</td>
</tr>
<tr>
<td>Posttest exp. G.</td>
<td>11.417</td>
<td>2.477</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results in Table 3 show that the t-observed did exceed the t-critical. In other words, there was a significant difference between the performances of the students in control and experimental groups on the post-test.

Table 4. The percentages of the control group in terms of their performance on pre-test and post-test

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>t-value</th>
<th>D.F</th>
<th>2-tail Sig</th>
<th>t-critical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest control G.</td>
<td>10.750</td>
<td>2.130</td>
<td>1.36</td>
<td>35</td>
<td>.183</td>
<td>2.021</td>
</tr>
<tr>
<td>Posttest control G.</td>
<td>10.833</td>
<td>2.131</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results in Table 4 show that the t-observed has not exceeded the t-critical. In other words, there was not any significant difference between the performances of the students of control group on the pre-test and post-test.

Table 5. The percentages of the control group in terms of their performance on pre-test and post-test

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>t-value</th>
<th>D.F</th>
<th>2-tail Sig</th>
<th>t-critical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre ex</td>
<td>10.528</td>
<td>1.874</td>
<td>6.24</td>
<td>35</td>
<td>.000</td>
<td>2.021</td>
</tr>
<tr>
<td>Post ex</td>
<td>11.417</td>
<td>2.477</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

According to the results in Table 5, the t-observed did exceed the t-critical. In other words, there was a significant difference between the performances of the experimental group on the pre-test and post-test.

Table 6. Comparison of the performance of the two groups on pre-tests and post-tests

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>t-value</th>
<th>D.F</th>
<th>2-tail Sig</th>
<th>t-critical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre con – post con</td>
<td>.8889</td>
<td>.854</td>
<td>5.65</td>
<td>35</td>
<td>.000</td>
<td>2.021</td>
</tr>
<tr>
<td>Pre ex - post ex</td>
<td>.0833</td>
<td>.368</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As Table 6 demonstrates the t-observed has exceeded the t-critical. This implies that the students in the experimental group performed significantly better on the post test. This outperformance can be attributed to the effects of the learning processes on the part of the participants during the treatment.

Therefore, as the above statistical analyses vividly indicate, the participants who received formal instruction of references and conjunctions on reading comprehension performed significantly better on the post-test compared to the control group. Furthermore, there was a significant difference between the performances of the experimental group on pre-test and post-test. Thus, the null hypothesis was rejected.

3. Conclusions and Pedagogical Implications

Based on the results obtained, ESP students’ awareness of references and conjunctions might positively affect their reading comprehension. This implies that if ESP teachers include a section highlighting and underlining references and conjunctions in their methodology, discourse comprehension on the part of the students might be enhanced. To do so, they can determine the references and conjunctions of the reading passages to be taught in
advance and draw the students’ attention to them in the classroom. When the instruction is finished, they may ask such questions about the text, the answers to which might be difficult for the students without understanding the cohesive relations. Overall, it can be concluded that cohesive ties are so crucial that they can be considered as the sine qua none of any program striving to improve ESP students’ reading comprehension.

References


