THE IMPACT OF TEXTUAL COHESIVE CONJUNCTIONS ON THE READING COMPREHENSION OF FOREIGN LANGUAGE STUDENTS

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Abstract

This study investigated the impact of textual cohesive conjunctions on the reading comprehension of Libyan university students studying English as a foreign language. The study assumed that conjunctions have a positive effect on reading comprehension if students are explicitly taught these items. Data were collected through using a self-completion questionnaire, and the application of two intervention programmes in Gharian and Sabrata English Departments. A hundred students participated in the programmes that included the administration of pre-and post-test and only post-test experiments. As a part of the experiments, participants who were assigned randomly to the treatment groups attended about thirty hours of explicit teaching of conjunctions. The results revealed that conjunctives facilitate the reading comprehension of the fourth-year English department students in two Libyan universities. These findings could have important pedagogical implications, which may require explicit teaching of conjunctions in order to improve reading comprehension.

Key words: conjunctions, cohesion, coherence, reading comprehension.

Introduction

Students go to school to learn many language skills. Reading in a foreign language may be one of the most important skills that a learner can maintain and develop when leaving school. However, foreign language readers encounter many problems when trying to achieve satisfactory understanding of written text. Failure to identify
conjunctions, recognise their meaning and functions, and the semantic relations they signal in written texts are among the major problems Libyan university students face.

It is suggested that Libyan university students' reading comprehension could improve if they can identify the conjunctive items, understand their meanings, and recognize the function they have in making the semantic relations that exist in written texts explicit.

This study investigates the impact of textual cohesive conjunctions on the reading comprehension of Sabrata and Gharian fourth-year English Department students in two Libyan universities. These students study English as a foreign language, since their native language is Arabic.

Conjunctions as suggested and defined by Halliday and Hasan (1976) were used in this study. This is because (Cohesion in English), which is the theoretical background here, provides “both the theoretical insights …and the pedagogical implications” (Steffensen 1988, p.140) needed for the study. Only conjunctions that link independent sentences and contribute to the local and global coherence of text are investigated.

The research background

Since text has become the focus of research, cohesion and coherence have attracted the attention of researchers as the main features of understandable text. Gutwinski (1976) and Halliday and Hasan (1976) were among the earliest linguists who suggested practical and detailed approaches to study the cohesion and coherence of text. Textual cohesive devices are divided by Halliday and Hasan (1976) into grammatical devices and lexical ties. The grammatical devices include reference, ellipsis, and substitution. The lexical ties include repetition and collocation. Conjunctions are the link between both the grammatical and the lexical categories.
These conjunctive items are also discussed in detail by Chapman (1983); Quirk et al., (1973); Hoey, (1991); Martin (1992); and Fraser, (1999).

The relationship between reading skills and textual cohesive conjunctions has been investigated by many linguists and psycholinguists (e.g. Stoodt 1972; Halliday and Hasan, 1976; Hoey 1991, among others). A heated debate has been going on regarding the importance of conjunctions as cohesive devices to the facilitation of reading comprehension, and their help to foreign language readers in extracting the correct meaning in a normal speed and with satisfactory understanding, (Nuttall 1996). Many researchers have come to the conclusion that all types of textual cohesive conjunctions facilitate reading comprehension in the same way (Stoodt 1972; Williams 1983; Chapman 1983; Cooper 1984; Sanders & Noordman 2000; Chung (2000); Degand & Sanders 2002).

Many other studies' findings have suggested that some conjunctive types are more useful to reading comprehension than others, (e.g. causal conjunctions are more facilitative to reading comprehension than additive conjunctions). In agreement with this view are Caron et al 1988; Goldman and Murray 1992; Geva 1992; Millis and Just 1994; Murray 1997. On the other hand, a number of studies have argued that textual conjunctions have no effect whatsoever on reading comprehension, (Geva 1986; Irwin 1982). Other researchers’ findings claim that some conjunctions impede comprehension and waste readers’ time, (Millis et. al.1993).

Thus, so far there has been no consensus on the actual impact of conjunctions on reading comprehension. Based on this, this research is a contribution towards the clarification of the actual impact of conjunctions on foreign students’ reading comprehension. It is hoped that more light is shed on this controversial topic for the benefit of learning a foreign language.
The research methodology

This section covers the presentation of the research problem, research questions, discussion of the research design, the research methods, description of the sample, instrumentation, and the procedure of the study. All these stages were scrutinized to assure maximum validity and reliability.

The research problem

When joining an English department, Libyan university students spend four years studying various language skills including reading in English. However, it has been observed that little progress is made in the efficiency of their reading comprehension. The number of students who fail reading comprehension courses every year in comparison with other English language subjects has revealed this. Even students who manage to pass the course usually obtain only the minimum score, which is 50 out of 100. For example, the reading course results of 70 third-year English Department students in Sabrata in the academic year 2003/2004 showed that 57.14 per cent of the students achieved 50 out of hundred, 30 per cent attained scores averaging from 51 to 65, and only 12.85 per cent scored over 66 as table (1) below shows.

Table (1) 3rd year reading comprehension scores

<table>
<thead>
<tr>
<th>No. of students</th>
<th>Score</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>50</td>
<td>57.14</td>
</tr>
<tr>
<td>20</td>
<td>51-65</td>
<td>30</td>
</tr>
<tr>
<td>9</td>
<td>66-100</td>
<td>12.85</td>
</tr>
</tbody>
</table>

This low level of achievement suggested that the reading comprehension of Libyan university students studying in English departments is poor and something has to be done to improve it.

Many factors contribute to this situation. Syllabus, teaching methods, and lack of trained teachers are just a few examples. What concerns this study, however, is the focus on certain language items that are believed to facilitate comprehension. This
The research questions

The researcher approached this study with the following major questions in mind: Are students in their fourth year of learning EFL in the English Departments of Gharian and Sabrata Universities, Libya, able to identify the textual cohesive conjunctions and interpret their function correctly in their reading comprehension? Do they benefit from being explicitly taught about textual cohesive conjunctions in their reading comprehension course?

The data collecting procedure was guided by the following sub-questions:
1. Can the subjects identify the items that function as conjunctions?
2. Can they interpret their function in written text correctly?
3. Does the ability to identify conjunctions and recognise their function facilitate their reading comprehension?

The research design

The main emphasis of this study was the collection and analysis of quantitative data through the application of two intervention programmes. This quantitative approach included *pre and post-tests* and *post-test only* experiments. The first intervention was organized in Gharian English Department and the second, (i.e. *post-test-only*) was held in Sabrata English Department. The target students were randomly assigned to a treatment group and a comparative group in both departments.

The reason behind organizing two intervention programmes in two different places was to check how far the pre-test affects the results of the post-test. Many researchers argue that pre-testing may influence the results of the post-test. This could
have a negative impact on the validity of the experiment. For example, Bryman (1989, p.85) highlighted that “the effects of pre-testing can not be ignored.” In agreement with this, Cohen et al. (2000, p.214) argued, “an interaction effect may occur as a result of the pre-test measure sensitizing the subjects to the experimental variable.”

Before the content of the teaching programme was decided, subjects of the experiments (i.e. the intervention programmes) were asked to complete an attitudinal questionnaire. This preliminary method was chosen to explore the attitude of the subjects toward conjunctions and their relation to reading comprehension. These pieces of information were essential to the selection of the teaching materials prepared for the interventions.

The teaching of the reading programme lasted for 12 weeks. Students of the treatment groups were explicitly taught how to identify conjunctions and recognise the semantic relations they signal in written texts. This programme was preceded by pre-testing and followed by post testing of the Gharian groups. However, the Sabrata English Department groups were only post-tested for the reason mentioned above.

**The study’s participants**

A hundred students from Gharian and Sabrata English Departments participated in the intervention programmes. In their fourth year of study, the students had their compulsory Reading Comprehension Course II after they had passed Reading Comprehension I in the third year. Their English background was approximately the same since the education system in Libya from the primary school to the university level is similar in all Libyan provinces. About 80 per cent of the participants were female students with an average age of 22 years old. Students participated voluntarily in the intervention programmes.
Intervention programmes

Explanation and causality of many educational problems could be objectively traced by using experimentation. Clear causality could be established if the investigator manages to control the rival variables and manipulate the independent variable(s). As Bouma and Atkinson (1995, p.126) highlight: “while the other research designs provide useful information, the experimental design provides the most rigorous test of a hypothesis which specifies that X causes Y”.

Experimentation is defined by Campbell and Stanley (1972, p.1) as “the portion of research in which variables are manipulated and their effects upon other variables observed.” Building on this, this researcher chose the experiments that consider the subjects’ circumstances and the regulations applied by the educational authority in Libya. However, validity and reliability were constantly checked carefully throughout the experimental procedure and the analysis of the collected data.

In this study two types of experiments were used:
1. Pre-and post- test experiment was applied at Gharian English Department,
2. Only post- test experiment was applied at Sabrata English Department.

By organizing the two experiments, which involved explicitly teaching the treatment groups conjunctions and their relationship to reading comprehension, it was hoped that the following objectives could be achieved:

- Teaching students to identify conjunctions as defined by Halliday and Hasan (1976).
- Teaching them to distinguish between conjunctive types.
- Teaching them to distinguish conjunctions from other connectives.
- Training them to recognise the semantic relations conjunctions impose on written text.
• Helping subjects to use conjunctions in predicting the local and global meaning of text components and achieve satisfactory understanding.

The testing instruments

Three measuring tests were prepared for the collection of the data for this study:

1. Conjunction identification test

A text adopted from Alexander (1977) was modified to accommodate similar number of conjunctive types. 16 conjunctive items were selected from Halliday and Hasan’s (1976) taxonomy to function as cohesive devices and contribute to the local and global coherence of the text as shown in table (2) below. The subjects were asked to identify the conjunctive items and underline or circle them. The length of the text and the level of difficulty were not factors affecting the test. However, the text had only 310 words and it was of a narrative type that was easy to understand.

Table (2) Conjunctions to be identified in the identification of conjunction test

<table>
<thead>
<tr>
<th>Conjunctive type</th>
<th>Additive</th>
<th>Adversative</th>
<th>Causal</th>
<th>Temporal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of conjunction</td>
<td>Moreover</td>
<td>Nevertheless</td>
<td>For this reason</td>
<td>At this point</td>
</tr>
<tr>
<td></td>
<td>Or</td>
<td>However</td>
<td>So</td>
<td>Then</td>
</tr>
<tr>
<td></td>
<td>In addition</td>
<td>Yet</td>
<td>Consequently</td>
<td>At the same time</td>
</tr>
<tr>
<td></td>
<td>luckily</td>
<td>still</td>
<td>In such an event</td>
<td>Afterwards</td>
</tr>
</tbody>
</table>

2. Function recognition of conjunction test

Halliday and Hasan’s (1976) taxonomy of conjunctive items has four semantic functions: additive, adversative, causal and temporal. To assess whether the subjects of the study recognised these functions, a list of 36 conjunctions were given in a table and the task of the students was to classify them according to their functions. To make the task easy, numbers were given to the four functions: additive (1), adversative (2), causal (3) and temporal (4). The students were asked to classify the given conjunctions by writing the suitable number beside the conjunction. Examples of the conjunctions given for classification are shown in the table (3) below.
3. Reading comprehension test

The text selected for the reading comprehension pre-and post-tests was adopted from Mosback and Mosback (1976). It was an expository text prepared with many others to be a part of a reading comprehension syllabus for foreign students learning English as a foreign language. The reason behind choosing an expository text was the belief held by many language researchers such as Goldman and Murray (1992, p.504) who argue that “the less a reader knows in the domain, the more important is knowledge of how general linguistic devices may be used to ascertain the local and global structure of the text.”

Thus, it is assumed that foreign language readers of expository text need to use conjunctions in order to understand the text message because of their limited knowledge related to the topic.

The text was modified to accommodate 20 conjunctions: five from each conjunctive type. They were selected to represent high and low frequency in English. Some of them originally existed in the text. A few others were added to balance the number of conjunctions from each type. The passage was designed to take the form of rational cloze test. The test slots were supplied with three conjunctions from different types in the form of multiple-choice alternatives. The choice of conjunction was directed by the semantic relation that existed between the preceding and the following independent sentences, or sometimes paragraph when the relation was global. The conjunctions used are shown in table (4) below.

<table>
<thead>
<tr>
<th>e.g.</th>
<th>And</th>
<th>1 yet</th>
<th>2 so</th>
<th>3 then</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Therefore</td>
<td>?</td>
<td>moreover</td>
<td>?</td>
<td>next</td>
<td>?</td>
</tr>
<tr>
<td>Additionally</td>
<td>?</td>
<td>because</td>
<td>?</td>
<td>nevertheless</td>
<td>?</td>
</tr>
</tbody>
</table>

Table (3) Classification of conjunctive types
Table (4) Conjunctive types and their positions in the text of the reading comprehension test

<table>
<thead>
<tr>
<th>Slot No.</th>
<th>Additives</th>
<th>Slot No.</th>
<th>Adversatives</th>
<th>Slot No.</th>
<th>Causals</th>
<th>Slot No.</th>
<th>Temporals</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>And</td>
<td>4</td>
<td>Still</td>
<td>1</td>
<td>Arising from this</td>
<td>3</td>
<td>Then</td>
</tr>
<tr>
<td>10</td>
<td>Furthermore</td>
<td>7</td>
<td>Yet</td>
<td>2</td>
<td>Therefore</td>
<td>8</td>
<td>At this point</td>
</tr>
<tr>
<td>13</td>
<td>Not only,</td>
<td>17</td>
<td>Whereas</td>
<td>6</td>
<td>Since</td>
<td>14</td>
<td>At this moment</td>
</tr>
<tr>
<td>16</td>
<td>For example</td>
<td>12</td>
<td>Nevertheless</td>
<td>9</td>
<td>Consequently</td>
<td>11</td>
<td>Firstly</td>
</tr>
<tr>
<td>20</td>
<td>in other words</td>
<td>15</td>
<td>however</td>
<td>18</td>
<td>thus</td>
<td>19</td>
<td>finally</td>
</tr>
</tbody>
</table>

Data analysis

Data collected by pre-and post-testing Gharian groups and post-testing Sabrata groups were classified and arranged into categories to be ready for further analysis. This was followed by descriptive analysis of the available data. The description took the form of frequency, percentage, and means. Finally, statistical t-test analyses were conducted to check the significance between the pre and post-tests results of the study groups. The analysis involved the identification of conjunctions tests, function recognition of conjunctions tests, and the reading comprehension tests results. The analysis procedure included the following stages:

1. The pre-tests results of the Gharian intervention groups were described and frequencies, percentages, and means were calculated. An independent-samples t-test was conducted to measure the significance between the pre-test score means. No significant difference between the two means were found which suggested that there was no evidence to claim that both groups were different (P > .05 as shown in the table 5 below). In other words, the analysis revealed that both groups were approximately equal in their ability to identify conjunctions, recognise their function, and use them in reading comprehension.
2. The pre-post-tests results of the comparative group were descriptively analysed. Frequencies, percentages, and means were computed. A paired-samples t-test was conducted to examine the significance between the means of both tests scores. The analysis revealed that there were no significant differences between the means of both tests in relation to function recognition of conjunctions and reading comprehension, (p > .05). However, a marginal significant difference was found between the pre-and post-tests of the identification of conjunctions, (p = .047 as shown in table (6) below).

### Table (5) T-tests results

<table>
<thead>
<tr>
<th>Pre-testing of intervention groups</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification of conjunctions</td>
<td>.366</td>
</tr>
<tr>
<td>Function recognition of conjunctions</td>
<td>.687</td>
</tr>
<tr>
<td>Reading comprehension</td>
<td>.929</td>
</tr>
</tbody>
</table>

### Pre-tests results of Gharian groups

![Pre-tests results of Gharian groups](image)

### Table (6) T-tests results

<table>
<thead>
<tr>
<th>Pre and post-testing of comparative group</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification of conjunctions</td>
<td>.047</td>
</tr>
<tr>
<td>Function recognition of conjunctions</td>
<td>.810</td>
</tr>
<tr>
<td>Reading comprehension</td>
<td>.653</td>
</tr>
</tbody>
</table>
3. The post-test results of both Gharian intervention groups were categorized and described in the form of frequencies, percentages, and means. An independent-samples t-test was used to check the significance between the two test score means. The analysis of the results revealed that there were remarkably significant differences between the post-test means of the identification of conjunctions, function recognition of conjunctions and in the subjects’ reading comprehension, \((p<.05\) as shown in table 7 below).

**Table (7) T-tests results**

<table>
<thead>
<tr>
<th>Post testing of both groups</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification of conjunctions</td>
<td>.000</td>
</tr>
<tr>
<td>Function recognition of conjunctions</td>
<td>.000</td>
</tr>
<tr>
<td>Reading comprehension</td>
<td>.006</td>
</tr>
</tbody>
</table>

![Pre-post tests results of Gharian comparative group](image)

![Post-tests results of Gharian groups](image)
4. The pre-post-test results of the treatment group were analysed. Frequencies, percentages and means were calculated and compared. A paired-samples t-test was used to measure the significance between both test score means. Significant differences were found between the pre-and post-test score means of the identification of conjunctions, function recognition of conjunctions, and the reading comprehension tests, (P<.05 as shown in table 8 below).

*Table (8) T-tests results*

<table>
<thead>
<tr>
<th>Pre and post-testing of treatment group</th>
<th>F value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification of conjunctions</td>
<td>.000</td>
</tr>
<tr>
<td>Function recognition of conjunctions</td>
<td>.000</td>
</tr>
<tr>
<td>Reading comprehension</td>
<td>.001</td>
</tr>
</tbody>
</table>

5. Descriptive and t-test analyses of the identification of conjunctions, function recognition of conjunctions and reading comprehension post-test results of the Sabrata intervention groups revealed that there were significant differences between the test performance of the study groups as shown in table (9) below. Treatment group subjects managed to achieve better results in the three tests in comparison with the comparative group.

*Table (9) t-test results*

<table>
<thead>
<tr>
<th>Post-test of both groups</th>
<th>F value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification of conjunctions</td>
<td>.000</td>
</tr>
<tr>
<td>Function recognition of conjunctions</td>
<td>.000</td>
</tr>
<tr>
<td>Reading comprehension</td>
<td>.000</td>
</tr>
</tbody>
</table>
6. The comparison between the post-tests results of the treatment groups which included the identification of conjunctions test result, the function recognition of conjunctions test result and the reading comprehension test result of Gharian and Sabrata suggested that the impact of the reading intervention programme on the groups’ performance was more or less equal. The only exception was the results of the identification of conjunctions post-tests of both groups which found to be significantly different. The Gharian treatment group achieved better than the Sabrata treatment group in the identification of conjunction post-test results, as shown in table (10) below.

Table (10) Descriptive and t-tests analysis results of the comparison between Sabrata and Gharian treatment groups.

<table>
<thead>
<tr>
<th>Intervention groups</th>
<th>Identification of conjunctions</th>
<th>Function recognition of conjunctions</th>
<th>Reading comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gharian TR. Gr.</td>
<td>X = 79.60, SD = 7.78</td>
<td>X = 67.73, SD = 12.28</td>
<td>X = 51.0, SD = 11.52</td>
</tr>
<tr>
<td>Sabrata TR. Gr.</td>
<td>X = 68.79, SD = 14.57</td>
<td>X = 65.02, SD = 16.09</td>
<td>X = 57.42, SD = 16.05</td>
</tr>
<tr>
<td>Difference</td>
<td>10.81</td>
<td>2.71</td>
<td>6.42</td>
</tr>
<tr>
<td>Percent</td>
<td>15.71</td>
<td>4.16</td>
<td>12.58</td>
</tr>
<tr>
<td>P- value</td>
<td>0.011</td>
<td>0.564</td>
<td>0.168</td>
</tr>
</tbody>
</table>

X= mean, SD= standard deviation, TR.Gr. = treatment group
Discussion and recommendations

The findings of the data analysed above revealed that explicit teaching of conjunctions had a significant impact on the identification of conjunctions, the function recognition of conjunctions, and on the reading comprehension of fourth-year Gharian and Sabrata English department students. Treatment groups performed much better than comparative groups in the post-tests after three months of applying the reading intervention programme. These findings positively answered the research questions mentioned above.

With the exception of the results for the identification of conjunctions, both the Gharian and the Sabrata treatment groups had approximately the same level of achievement. This was evidenced by the results of the statistical t-test that suggested no significant difference between the means of all the post-test scores.

However, it was observed that the level of achievements for all tests was not equal. The improvement in the identification of conjunction post-test results was 145.22 per cent in Gharian and 125.25 per cent in Sabrata English Department. The achievement of the post-test results of function recognition of conjunction in Gharian was 95.75 per cent and in Sabrata was 97.90 percent.
In contrast, the reading comprehension post-test results of both groups were significantly lower than the indicated results. The percentage of improvement in Gharian was 30.76 per cent and in Sabrata was 33.04 per cent. These differences reported between the treatment group’s post-test results could have the following explanations:

1. When applying the reading intervention programmes it was observed that students of the treatment groups could easily learn by heart the taxonomy of Halliday and Hasan (1976) given to them during the application of the reading intervention programme sessions. Their task was to just remember the conjunctions included in the list and be able to recite them and recall them again in the post-test. Thus, they had the highest scores in the identification of conjunctions post-test.

2. Students do not usually have much difficulty in understanding certain rules or classifications, but when they need to apply them they sometimes fail to do so. As Goldman and Murray (1992, p.505) stated “ESL students frequently are very good in reciting the prescriptive rules of usage for various [conjunctions],” but to master the appropriate use of conjunctions is “extremely difficult”. Geva also (1992, p.735) highlighted that “adult L2 learners may demonstrate familiarity with the meaning of conjunctions, yet fail to utilize them in extended discourse.”

3. It seems that identifying a close list of conjunctions and classifying them into four categories according to their semantic function does not take much time and effort to understand. However, to recognise the semantic functions that exist in a written text, and use the correct conjunction to make the semantic relations explicit need practice and time.

The three months of explicit teaching of conjunctions succeeded in developing the study subjects’ ability to identify conjunctions and classify them according to their
semantic functions; however, the duration was not long enough for them to be able to exploit this knowledge in reading comprehension. More time and effort was needed to achieve this objective. While there was a significant improvement in the reading comprehension of the treatment groups, the level of improvement could be increased further if more time was given.

4. The subjects of the intervention programmes study English as a foreign language. This means that their reading skills are not as fluent as native speakers. As cited by Goldman and Murray (1992), Johnston and Pearson (1982) argue that foreign language readers can read in small text units, such as clauses and sentences. However, they need more experience to be able to form the correct global meaning of the written text. More training is needed for better performance.

5. Even though the subjects of the study were chosen from students in their fourth year of learning the English language (their final year of study before graduation), their English language level was not good enough to enable them to tackle any written text. It was believed that some of the subjects’ reading skills were not good enough to understand the expository text given to them in the reading comprehension test appropriately because of the limited vocabulary they had. This may have had a negative effect on the average score of the test. Qian (2002, p.518) found a “high intercorrelation between vocabulary size, depth of vocabulary knowledge, and reading comprehension.”

6. The subjects of this study were adult students learning English as a foreign language. This meant that they were literate in their native Arabic language. Because of this, it was possible that Arabic language reading strategies interfere in the strategies used when they read in English. With the limited number of
conjunctions that exist in the Arabic language, subjects could use other language
textual features at the expense of conjunctions when they read in English.

All in all, explicit teaching of conjunctions was found to be useful for better reading comprehension. This was suggested by the improvement the treatment groups achieved in their post-tests results both in Gharian and Sabrata English Departments. The encouraging findings of this study suggest that the reading comprehension of foreign language students could be improved if they are explicitly taught conjunctions, and the way they are used in making the semantic relations which exist in expository texts explicit.

References


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