

***The Impact of Parenthetical Paraphrase, Exemplification,  
and Repetition on the Reading Performance of Iranian EST  
Students\****

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**Abstract**

The present study investigated the impact of three lexical elaborative premodification techniques namely, adding parenthetical paraphrase or “priming glossaries”, exemplification, and repetition to seek the differences among them as far as the reading performance of students on them was concerned. These techniques were applied to three texts of general science chosen based on their readability indices and the performance of students on them to gain similar texts. Finally, four versions of the texts, including three premodified texts as well as the original one, were administered to 171 EST students of Iran University of Science and Technology (IUST) and Islamic Kar University, who were almost homogenized by Cambridge Preliminary English Test (PET). The result showed that students performed significantly different and better on parenthetical paraphrase and exemplification versions. Yet, there was no significant difference between their performance on the original and the repetition ones. The findings of this thesis can be important to ESP, EST, or EAP materials developers who wish to expose students to less difficult versions of English texts to enhance their comprehensibility and use intra-lingual translation as a means of improving reading skill.

**Keywords:** elaborative premodification, exemplification, intra-lingual translation, parenthetical paraphrase, priming glossaries.

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### **Introduction**

It is an undeniable fact that for many students in many parts of the world, reading is by far the most important of the four skills in a second language particularly in English as a second or foreign language. Alderson (1984) commented on the importance of reading skill as follows:

*In many parts of the world a reading knowledge of a foreign language is often important to academic studies, professional success, and personal development. This is particularly true of English as so much professional, technical and scientific literature is published in English today. (p. 1).*

As Rivers (1981) points out, a large proportion of students who learn a foreign language will never have the opportunity to converse with native speakers, but they will have access to the literature and periodicals, or scientific and technical journals written in that language, and English in particular. Thus, many may need these publications to assist them with further studies or in their work; others may wish to read in their leisure time to keep in touch with a wider world.

The college students around the world frequently need to read scientific and technical materials written in English as part of their academic requirements. In fact, students obtain the bulk of information through reading rather than listening. Therefore, the reading process has become a dominant skill in EST. In reality, however, the fact remains that many readers of technical and scientific English texts encounter so many difficulties in extracting precisely the meaning out of these texts. Logically, the preliminary step to take is to get to understand what sorts of problems the readers have in the comprehension of such texts. Then, while cognizant of the qualities of the difficulties encountered by readers, a researcher should take the second step with the aim of searching for the answer to the question of where the sources of such particular problems lie. In fact, the second

step would be as a prerequisite for taking the third and final step, which would be thinking of incisive ways in order to alleviate the readers' problems or even eradicate the obstacles in a way for readers toward precise appreciation of technical and scientific texts.

Because the cases under study are scientific and technical texts, the attention should considerably be focused on the difficulties that most of the students may encounter while reading such texts written in their majors. Cowan (1974) gave a general picture concerning the difficulties Iranian students may face when they are forced to read scientific or technical prose. He maintained that:

*The two most important problems the students encounter can be termed "processing difficulties." We take as our starting point the assumption that reading is essentially a process of decoding the meaning of sentences and that the major components of this process can be isolated. The two linguistic impediments to this process have been delineated by Eskey (1971). They are: 1. Vocabulary problems 2. Structural problems. (p. 390).*

### **Literature Review**

Taking so many defects associated with linguistic forms of adjustments into account, scholars were inspired to look for an alternative approach to modification through which they could achieve the two substantial goals: "(a) improving comprehension and (b) providing learners with the rich linguistic form they need for further language learning" (Yano, et al. 1994, p. 214). Input should be modified in the direction of elaboration rather than artificial simplification, because elaboration retains more nativelike qualities than and is at least equally successful as—if not more successful than—simplification in improving comprehension as OH (2001) mentions. Thus, it was the time for elaborative modification to emerge as a viable alternative to simplification for both spoken and written discourse to foreign and second language learners.

This potential alternative approach to modifying written input derives from research findings on the adjustments native speakers make in their conversations with nonnatives to facilitate comprehension. In their comparisons of NS-NS, NS-NNS, and NNS-NNS conversations, researchers such as Larsen-Freeman & Long (1991), and Long (1983) identified two kinds of adjustments: linguistic and conversational between which the latter as Yano, et al. (1994) assert, “are more pervasive and provide a rich source of ideas for the elaborative modification on both spoken and written texts” (p. 192).

As a case in point, elaboration can be defined as an approach through whose application a text can be modified for easier comprehension not by removing complex structures and low-frequent vocabularies as simplification does, but by adding redundant information to the text through the use of different techniques. Or more specifically, according to the distinction Gillette & Wit (1998) made between “grammatical” and “contextual redundancy,” elaboration can be defined as an approach to add “contextual redundancy” through different techniques to a piece of discourse and thereby produce a “pregnant context” (VanParreren quoted in Mondria & Boer, 1991, p. 252) within which the meaning of low-frequent vocabularies would become clear through “semanticizing” (Mondria & Boer, 1991, p. 249) or “contextualizing” (Honeyfield, 1977, p. 436) and the meaning of complex structures would be elucidated.

To put it in simpler words, a text should contain enough known pieces of items and information for learners to let them interpret the unknown items accurately.

Mondria and Boer (1991) translated the definition of “pregnant context” put forward by VanParreren as “a context that offers ample clues for finding the meaning of the new word” (p. 252). In their translation of the elaboration put forth by VanPrreren concerning this concept, they added that “The more ‘pregnant’ (compelling) the context is, the easier it is to guess the word” (p. 252). In their

arguments concerning the case, they claimed that “contextual factors, like the redundancy of the context, the occurrence of synonyms and antonyms or words that are typically associated with the word concerned” (p. 252) would determine its accurate guessability.

A point that is worth arguing here is the complexity and length of the sentences in the elaborated versions of texts. In fact, elaborative modification often renders the texts that are, in comparison with their simplified or unmodified versions, more complex, longer, and less readable according to readability indices. Thus, in turn, they are expected to be less accessible and require more time to read; however, the studies conducted thus far haven’t confirm such assumptions. Regarding the time of reading such versions, Urano (1998) found that, “the mean reading time in the elaborated condition was significantly shorter than that in the baseline condition, indicating that lexical elaboration facilitated L2 reading comprehension” (p. 8). Hence, it can be concluded that contextual redundancy can fairly compensate for the unknown elements within the elaboratively modified texts. Making the point more explicit by devising an elaborative device, i.e. exemplification, Yano, et al. (1994) asserted:

Thus, despite its greater length, lower-frequency vocabulary items and use of subordination, a single multiclausal sentence that explicitly links two propositions,

1. Because he had to work at night to support his family, Paco often fell asleep in class.

can be easier to process, as well as a more realistic model of language use, than a series of shorter linguistically simpler sentences that use more frequent lexical items:

2. Paco had to make money for his family. Paco worked at night. He often went to sleep in class. (p. 191)

There certainly must be some underlying cognitive processes that enable the reader to comprehend the texts. In the related case, Yano, et al. (1994) explain the underlying processes as they argue:

*Comprehension of inference items requires a linkage from the written text to pragmatic knowledge. Information from the text, if comprehended accurately, implies that some other consequence will follow....The technique of elaboration, including parenthetical expansion of key terms and concepts in the original text, provides the reader with a "second look" at those terms and concepts and consequently increase the chance the inferencing about them can be stimulated in the reading process (p. 213).*

Furthermore, they explained the reason why the simplified and unmodified versions of a text fail to provide a deeper "pragmatic linkage" and thus deprive the learner of a comprehensible instance of input. They argued the matter as follows:

*In contrast to the elaborated texts, unmodified and simplified texts provide less contexts for stimulating the deeper pragmatic linkage necessary for inferring the consequence of passage meanings. Unmodified texts probably fail because concepts are obscured by structural and lexical detail. Simplified texts do not enhance comprehension because they strip away the richness in detail and connections that help a reader perceive implicational links. (p. 214)*

Several studies have sought to determine the relative effectiveness of pure simplification and pure elaboration of written and spoken language on foreign language learners' comprehension. What has come to light is the fact that elaboration is as effective as, if not superior than, simplification in rendering the text more accessible to learners. Besides its most advantage over simplification, retention of elements associated with the original forms, has brought it under consideration as a really more preferable approach to modification of



language. Highly recommending such an approach, Parker & Chadron (quoted in Larsen-Freeman & Long, 1991) concluded:

*As several studies have suggested ... if one is inclined to present the most native-like TL input, one should modify the input in the direction of elaborative alterations rather than syntactic simplification, for these would allow more native-like complexity and be at least equally successful in promoting comprehension, if not better. (p. 139)*

Regarding this point, having a look upon the previous studies concerning the case would certainly be inspiring. Yano, et al (1994) gave a slightly modified and updated version of Parker & Chadron's summary table of investigations of the absolute or comparative effectiveness of simplification and elaboration on SL comprehension. They also summarized the results of those studies into six general findings out of which the following four are of relevance to the present study:

1. Comprehension is usually increased by linguistic simplification, although simple sentences alone do not always help and can even hinder.

2. Simplification and elaboration often co-occur, but when their effects can be distinguished, simplification is not consistently superior to elaboration, and some studies find elaboration more effective.

3. Comprehension is consistently improved by (a) interactional modifications, and (b) by a combination of simplification and elaboration.

4. Modifications are more useful to NNSs of lower L2 proficiency.

NNSs' perceived comprehension is greater when speech has been modified for them.(P. 92)





Which one of the three lexical elaborative premodification techniques: parenthetical paraphrase (priming glossaries), exemplification, or repetition, is the most contributive to text's comprehensibility for less-abled Iranian readers of scientific and technical materials?

In accordance with the research questions posed above, the present study is a design with the intention of examining the following null hypotheses at the probability level of 0.05.

There is no significant difference between the comprehensibility of original texts for less-abled Iranian readers of scientific and technical materials.

And the second hypothesis is that:

There are no significant differences among the comprehensibility of unmodified and elaboratively premodified versions of texts for less-abled Iranian readers of scientific and technical materials.

## **Method**

### **Subjects:**

The subjects participating were low-proficient students whose reading comprehension was almost always liable to be impaired while reading texts full of less-frequent words. A number of 302 students including both male and female took part in the final phase of the study. The study incorporated the students of the two technical universities of Iran University of Science and Technology and Islamic Kar University.

### **Instrumentation:**

The instrumentation of the study can be summarized in four types of test administrations:

1. *The administration of the three unmodified texts without reading comprehension questions.*

2. *The administration of Preliminary English Test (PET) as a proficiency test.*
3. *The administration of an unmodified version of a reading comprehension test.*
4. *The administration of the three elaboratively pre-modified versions of reading comprehension tests.*

**Procedure:**

The current study undergoes different processes and takes various steps behind each of which a particular rationale resides. In each process within each step, a specific procedure is taken to help the study progress as infallibly as possible in its way to find an acceptable answer to the question which rationalizes its coming into existence.

Below are the lists of the preliminary to ultimate steps taken in the current study. Furthermore, the procedures taken and the instrumentations used in each phase are explained.

1. Text selection. In this step as the first phase of the study, the researchers try to select the texts. To do so, the researchers follows the three criteria mentioned as follow:

a. The content of the texts are of general science in order to be of the same level of interest to all EST students participated in different parts of the study. To do so, the researchers try to control the critical variable of interest in the subject matter of the reading materials used for the study. The texts are excerpted from the two sources of:

- 1) Scientific American
- 2) IELTS booklet

b. Texts' readability is determined to be one or one and a half standard deviation below the mean of the readability indices of the reading materials they study in the two books of:

- 1) Engineering

## 2) Reading Through Reading

In this regard, the readabilities of thirty paragraphs of the above-mentioned books are calculated. Then, the mean and the standard deviation of readabilities are calculated. They are 49.96 and 15.48 respectively.

The readabilities of the selected texts are in the range of 27-35. In this part, all the readabilities are calculated by computer using Fletch Reading ease formula. To sum up, the researchers look for difficult texts to modify or, in better words, to easify in the next steps of the study.

c. The length of the selected passages are in the range of 250-350 words.

2. Provision of reading comprehension questions and their items analyses. In this step, ten questions for each passage are written in multiple-choice format. Here, the questions are just revised by an ESP teacher, and then are administered for the purpose of items analyses. As it was formerly pointed out, in this phase the two classes of test administration: that of Preliminary English Test (PET) and that of unmodified texts along with 30 questions (classes b & c), are conducted simultaneously. The allocated time for the former test is one and a half and for the latter test is half an hour. In this stage, a number of 309 students participate. Out of this number, only 171 students are selected as a homogenous sample to study.

3. Determining texts' variation and test's reliability and validity. As it was explained before, the three passages are tried to be selected according to the three criteria in order to assure their similarity. To establish this similarity more than before, the researchers decide to understand about the variation, if any exists, among the three passages according to the subjects' performance on their reading comprehension questions. For this purpose, a number of 40 students as a homogenous sample are selected. In this step of the study texts homogeneity, test's reliability and validity are confirmed. The validity of the reading comprehension test is judged against the valid

Preliminary English Test (PET) as a proficiency test. It should be pointed out that in this step each of students receives two pamphlets:

- a. The one consisting the three texts along with their reading comprehension questions.
- b. The one consisting PET.

4. Identification of difficult words. In this step, the first class of test administration is implemented as an instrumentation to identify the unknown words of the three passages. A number of 60 students are asked to underline the words they find as hindrances in their comprehension of the whole text. In this phase, the three texts are randomly administered among the students.

5. The selection of words among the underlined to modify elaboratively. The procedure is to select the words with high or significant frequencies. In other words, the underlined words with insignificant frequencies are all put aside to be remained intact throughout the processes of modification. For this purpose, the words whose frequencies of selection as difficult words are as high as 40 or more are chosen to be modified elaboratively in the next step.

6. The elaborative modification of the selected difficult words within the three passages. In this phase, which must quite candidly be confessed to be the most important, challenging, and time-consuming step, the researchers modify the difficult words elaboratively employing the three lexical elaborative premodification techniques each of which is applied separately. In more cogent words, the three passages are elaboratively modified in three different times by:

- a. The implementation or exertion of “adding repetition” technique over the unknown words in the three passages.
- b. The exertion of “adding priming glossaries” or “parenthetical paraphrase” technique upon the unknown words in the three passages.
- c. The implementation of “adding exemplification” technique over the unknown words in the three passages.

To elucidate the point, it should be pointed out that after this step the researchers come up with the three versions of the reading comprehension test. An important point here is that each of the three lexical elaborative premodification techniques is applied to modify the only words that lend themselves appropriately to it. In other words, there may be some cases in which a particular technique fails to modify some of the difficult words. In this regard, those words are left intact as if they are not selected as difficult words. Thus, modification is tried to be conducted while taking into account syntactic, semantic, and discoursal aspects of the texts as coherent units of meaning.

7. Examination of modified texts' naturalness. After conducting the processes of modification, the researchers want to establish the naturalness of the modified texts. For such a purpose, all the texts are screened by an educated native speaker of English and three teachers of English for Science and Technology to identify some textual features that impair the texts' naturalness or genuinity. Taking into account some of the textual defects spotted by the examiners, the researcher revise the texts and thereby lessens their artificialities.

8. The final administration. In this phase, that is the time to reap the reward of all the previous endeavors, four forms or versions of the reading comprehension test are administered randomly among a number of 309 students who all receive Preliminary English Test (PET). To shed light over the case in point, each subject receives one of the four forms or versions of the reading comprehension test along with PET proficiency test. According to their scores of proficiency test, a homogenous sample of 171 students is selected for the purpose of this step that is to answer the research questions inspired the present study.

**Design:**

The design was *Ex post facto*, for there was no instructional program or treatment during the study. In determining texts' variation, the dependent variable is students' scores on reading

comprehension tests and the independent variable was the three levels of *Text 1, Text 2, and Text 3*.

In the final step to answer the second research question, the dependent variable was students' scores on reading comprehension tests and the independent variable was four levels of one unmodified and three modified versions of the reading comprehension tests.

### **Results and Discussion**

This section is the presentation of the data related to different phases of the study mentioned in the proceeding section.

First of all, since the result of this study relied chiefly upon the selected texts and their reading comprehension questions, reliability of the test was calculated by employing KR-21 reliability formula. The reliability of the reading comprehension test, which was validated against PET, was 0.697 and its validity was 0.799. On the other hand, for the selection of texts, along with enjoying the judgment of two Iranian EFL professors as well as Flesch Reading Ease formula, as two criteria, upon the sameness of the three excerpts of scientific passages, the performance of subjects on all texts was considered as a reliable source. To do so, the author applies General Linear Model (GLM)-Repeated Measure, for it was supposed to have a within subjects as well as ex post facto design, one dependent variable which was reading comprehension of students and one independent variable at three levels, i.e. texts 1, 2 and 3.

In the tabulated output listing of GLM-Repeated Measure, descriptive statistics come first. Table 1 shows descriptive statistics of students' performance on the reading comprehension questions of each text in the unmodified version. Although the three means are very close to each other, yet the standard deviation for the first one shows a higher number which can be interpreted as the low homogeneity of the students performing on it.

**Table 1****Descriptive Statistics**

	N	Mean	Std. Deviation
Text1 for text variation	40	6.0500	2.1715
Text2 for text variation	40	6.1000	1.7658
Text3 for text variation	40	6.1500	1.9683

Number of Items for each text: 10

The ANOVA summary table for the within subjects factor Reading Comprehension is shown in table 2, which tabulates tests of Within Subjects Effects. In the present case, there was no need to make a conservative F-test because the Mauchly test was insignificant. It was apparent from the Sig. column that in the present study these more conservative statistics made no difference to the result of the ANOVA F-test. Note the p-value for F (Sig.) in the Sphericity Assumed row (0.956) was significant, because it was beyond 5 per cent level. Thus there was no significant difference between 3 types of texts employed in this study and the following results were deduced:

$$F(2,78) = 0.045; p > 0.05.$$

**Table 2****Tests of Within-Subjects Effects**

Measure: MEASURE\_1

Source	Type III Sum of Square	df	Mean Square	F	Sig.	
TEX	Sphericity Assumed	.200	2	1.00E-01	.045	.956
	Greenhouse-	.200	1.850	.108	.045	.946
	Huynh-Feldt	.200	1.938	.103	.045	.952
	Lower-bound	.200	1.000	.200	.045	.832
Error(TEXT)	Sphericity Assumed	171.800	78	2.203		
	Greenhouse-	171.800	72.140	2.381		
	Huynh-Feldt	171.800	75.574	2.273		
	Lower-bound	171.800	39.000	4.405		





**Table 4**

## ANOVA

scores for texts

	Sum Square	df	Mean Squar	F	Sig.
Between Groups	1299.677	3	433.226	41.820	.000
Within Groups	1729.984	167	10.359		
Total	3029.661	170			

In table 5, which presents the result for Scheffé test, the asterisks illustrate the significant differences between pairwise comparison of techniques. The relationship between the performance of students on original text is significantly different from those on parenthetical paraphrase and exemplification. It is the same with the result of repetition compared to those of parenthetical paraphrase and exemplification. However, there is no significant difference between the two following pairs original-repetition and parenthetical paraphrase-exemplification and the differences are shown in Sig. column respectively 0.205 and 0.98 level of significance.

**Table 5**

## Multiple Comparisons

Dependent Variable: scores for texts  
Scheff

(I) Groups of premodified and original texts	(J) Groups of premodified and original texts	Mea Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower	Upper Bound
Original Text	Parenthetical paraphrase	-6.8957	.6958	.000	-8.8608	-4.9305
	Exemplification	-5.1889	.6994	.000	-7.1642	-3.2136
	Repetition	-1.5500	.7197	.205	-3.5826	.4826
Parenthetical paraphrase	Original Text	6.8957	.6958	.000	4.9305	8.8608
	Exemplification	1.7068	.6748	.098	-.1991	3.6126
	Repetition	5.3457	.6958	.000	3.3805	7.3108
Exemplification	Original Text	5.1889	.6994	.000	3.2136	7.1642
	Parenthetical paraphrase	-1.7068	.6748	.098	-3.6126	.1991
	Repetition	3.6389	.6994	.000	1.6636	5.6142
Repetition	Original Text	1.5500	.7197	.205	-.4826	3.5826
	Parenthetical paraphrase	-5.3457	.6958	.000	-7.3108	-3.3805
	Exemplification	-3.6389	.6994	.000	-5.6142	-1.6636

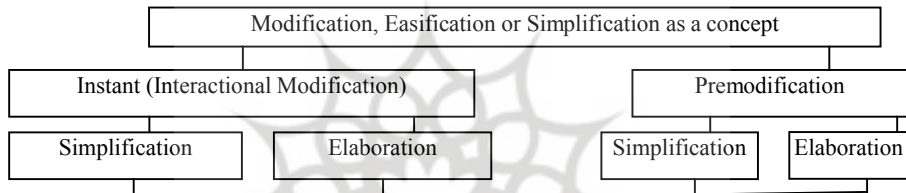
\* The mean difference is significant at the .05 level.

The two general conclusions that can be drawn from the whole study are:



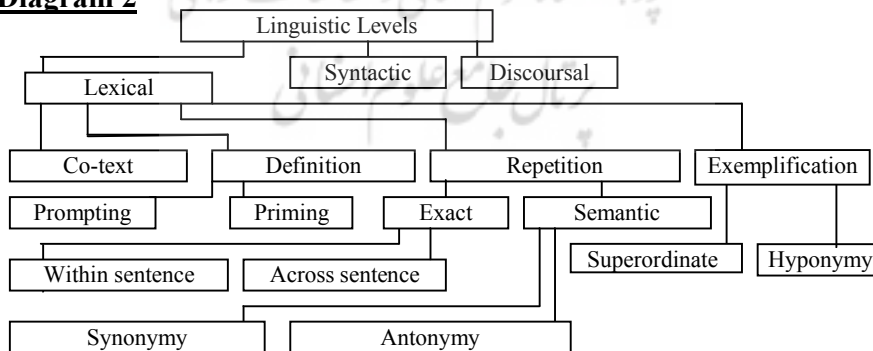
of modification. They may be used independently or as a combination e.g. in instant modification and elaboration may be applied individually or they may be applied together. To put it another way, a difficult text may be simplified as a concept using simplification techniques or both elaboration and simplification techniques. The following steps may be useful for easification in written and oral language.

### **Diagram 1**



In diagram 2, three linguistic levels are shown, however, lexical level has been investigated in the present study and dealt with in depth which level is composed of four general techniques: co-text, definition, repetition, and exemplification, each of which including some subcategories except for the co-text. So, the reader may find interest in each subcategory illustrated below.

### **Diagram 2**



Thus, this categorization may represent as a candidate for further research to understand about the effect of such an approach on reading comprehension. Furthermore, all the aforementioned lines of research can be conducted by the students of science and technology who use English for specific purposes.



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