Research Article

ON THE EFFECTIVENESS OF STRATEGY-BASED INSTRUCTION OF TEXTUAL SIMPLIFICATION ON EFL LEARNER'S READING COMPREHENSION ABILITY

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ABSTRACT

This study was conducted to investigate the effect of textual simplification strategy on Iranian Intermediate EFL learner's reading comprehension ability. For this purpose 100 male and female university students majoring in English Translation participated in this study. Having being homogenized by an OPT test, 40 learners were selected and they were randomly assigned into two groups, control and experimental. Then both groups sat for a pre-test which was a reading comprehension test. The purpose of this test was to measure the learner's initial subject knowledge of reading comprehension ability. Afterwards, the experimental group received treatment based on textual simplification strategy. However, the control group received no treatment and approached the traditional way of teaching. The treatment procedure took 10 sessions. Finally at the end of the course both groups sat for the post test of reading comprehension. Then the statistical analysis was run through ANCOVA. It was explored from the study that learner's reading ability improves more when they are provided with textual simplification strategy. However, this study provides a significant contribution in curriculum innovation and policy with respect to the learner's reading comprehension development.

Key Words: Textual Simplification, Reading Comprehension

INTRODUCTION

Text simplification can be defined as any process that reduces the syntactic or lexical complexity of a text while attempting to preserve its meaning and information content. The aim of text simplification is to make text easier to comprehend for a human user or process by a program.

A common method for assessing whether a text is suitable for a particular reading age is by means of using readability metric, such as the Flesch readability score, proposed in 1943 and more recently popularized by Microsoft Word. These metrics are based solely on surface attributes of a text, such as average sentence and word lengths.

The term readability is therefore a misnomer; these metrics do not attempt to judge how readable, well written or cohesive a text is, or even whether it is grammatical. Rather, they suggest what reading age a text (that is assumed to be well written, cohesive and relevant in content) is suitable for, by means of a calibration with school reading grades.

Statement of the Problem

Reading is definitely a basic means to literacy as well as language learning. Talking about this skill, we have to bring into focus the who and what of reading; that is the reader and the reading material. We cannot reach to reading objectives unless we establish a proper match between these two elements. Actually, prior to teaching reading, appropriate material should be selected. As Thonis (1970) suggests:

 "The choice of material is big decision because it usually determines the vocabulary, language structures, and concepts which make up the reading program. These learning materials will influence the learning outcomes more than anything else in the classroom."

A distinction should be made between reading comprehension which is the focus of this study and reading aloud which is reading without the reader getting much to meaning (Birjandi *et al.,* 2006). What we mean by reading comprehension is reading a passage for meaning or for recreating the writer's

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meaning without vocalizing what is being read. The ultimate purpose of reading is comprehension of written passage (Birjandi *et al.,* 2006).

As it was mentioned before, in any reading course, the material is the most important part. Because through access to authentic, organized materials, reading ability can be maintained at a higher level by students themselves. But it should be mentioned that if students are exposed to original texts, which don't match the students' knowledge and experience, the texts become too complex for the comprehension to occur. Besides, students might develop a negative attitude towards reading and many of them may avoid reading at all.

As a matter of fact, reading comprehension entails three elements: the reader who is meant to comprehend; the text that is to be comprehended and the activity in which comprehension is a part of (Snow, 2002). In addition to the content presented in the text, the vocabulary load of the text and its linguistic structure, discourse style, and genre interact with the reader's knowledge. When these factors do not match the reader's knowledge and experience, the text becomes too complex for the comprehension to occur. One solution for this problem is introducing modified readings at the beginning levels and increasing the complexities of the text as the student's progress, via a process called Text Simplification (TS). The aim of text simplification is to maximize the comprehension of written texts through simplifying their linguistic structure. This involves simplifying syntactic structure by breaking down and changing the syntactic structure of the sentence. As a result, it is expected that the text can be more easily understood by learners (Mapleson, 2006; Siddharthan, 2003; Max, 2006).

Besides, text simplification may involve dropping parts or full sentences and adding some extra material to explain a difficult point. Textual simplification in the past has been defined as any process that reduces the syntactic complexity of a text while attempting to preserve its meaning and information content (Jarrahian, 2006).Syntactic simplification is the process of reducing the grammatical complexity of a text, while retaining its information content and meaning (ibid).Text simplification processes, following the 3stage architecture proposed by Siddharthan (2002), include stages of analysis, transformation and regeneration. To simplify, however, we need to take some factors into consideration. As Bruce and Robin (1988) hold:

"If text must be changed so that the intended readers can understand them we want to be able to identify what the barriers are and what improvements actually increase comprehension".

As a matter of fact, how to simplify passages has been an area of controversy over the past few decades. However, despite the fact that there are many arguments against simplification, simplified passages are more attractive for many EFL students, and this fact shows that simplification, although it's not theoretically proven, does have an impact on students' comprehension of text.

Therefore, how text is to be simplified to aid comprehension is not a simple task to be done intuitively. Rather, it requires a scientific endeavor. The present study, therefore, is being carried out to shed scientific light onto sophisticated process of simplification.

According to the pilot study done at Payam Nour University, it has been revealed that many Iranian university students have problem in reading comprehension.

This study is addressed to investigate the effect of textual simplification on Iranian Intermediate EFL learners.

Research Question

In order to tackle the problem of the research in a much consolidated way, the following research question has been formulated as follows:

-Does textual simplification have any effect on Iranian EFL learners' Reading Comprehension ability?

Research Hypothesis

To answer the research question of the study, the following research hypothesis has been formulated as follows:

-Textual simplification has no effect on Iranian EFL learners' reading comprehension ability.

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Review of Literature

One of the fundamental issues in teaching reading is providing the learners with "appropriate" material. "Appropriacy" for the material, however, is not an absolute or independent characteristic. It gains significance only when the consumers, the readers, are brought into the picture. In other words, there should be a match between intended readers general proficiency with the reading material. As Paulston and Bruder (1976) hold:

"The most important consideration in selecting text is the level of reading difficulty which must be matched to the overall proficiency of students."

Davison (1988) stated that over 60 percent of native speakers of English were attempting to read materials in various subjects which had been judged to be too difficult for their reading skills and general reading development. Thonis (1970) conducted similar studies on high school textbooks. They found that the reading level of the textbooks tended to be above the reading ability of majority of students.

The same findings were reported by Singer (1989). He noted that the reading requirements of the various subjects in the textbooks are burdensome. Furthermore, a brief survey of ESP students' language proficiency and their textbooks in Iran reveals that they are not well-matched. Such novice readers get easily frustrated and discourage unless text would be modified adequately. So there is a need to make reading materials appropriate syntactically so that there is a match between students' knowledge of grammar and the syntax of reading material. Actual evidence for the strength of simplified texts lies in experimental studies. For instance, Long and Ross (1993) compared comprehension scores of L2 readers using three versions of the same text authentic, simplified, and elaborated versions.

Long and Ross found that students who read the linguistically simplified text scored significantly higher on multiple choice items meant to test comprehension than did those that read the authentic version. They also found that students who read the elaborated version did not score significantly better than those that read the authentic or the simplified text. These results were replicated in a follow up study (Yano *et al.,* 1994) which demonstrated that there were no significant differences between simplified and elaborated texts, but simplified texts showed significant gains in reading comprehension over authentic texts whereas elaborated texts did show gain over authentic texts.

A later study conduct by Tweissi (1998) also found that simplification positively affected student's reading comprehension. However, Tweissi found that it was the type of simplification and not the amount of simplification that played the most important role in assisting the students to understand the material (e.g., texts with simplified lexicon led to greater comprehension gains than did other types of text modifications). Overall, these studies support the basic notion behind simplified texts: that the use of simplified input results in more comprehensible language. According to Balaghizade, simplifying reading passages promotes reading comprehension (Balaghizade, 2010).

Methodology

1. Introduction

As it is said earlier, the present study was conducted to ameliorate the pedagogical and practical effect of textual simplification on reading comprehension. So this part aimed at paying attention to the methodology of the research as follows: the design of the study, pilot study, participants of the study, materials, procedures and the statistical analysis.

2. Design of the Study

The design of the study was quasi-experimental design, which is a pre-post test design.

3. Participants

The participants of the study were 100 intermediate students both male and female, aged between 19 and 25, who were majoring in English Translation at Payam Nour University. After administration of OPT test, 40 intermediate students whose scores were between 32 and 79 were selected. They were divided into 2 groups control and experimental group. Both groups sat for the pre-test of reading comprehension test to take their initial knowledge of reading comprehension ability. Then the control group received no

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treatment. However, the experimental group received treatment based on textual simplification technique and finally both groups sat for the post-test, which is the same reading comprehension test.

4. Materials

The following materials were employed throughout the course of this study. An OPT test was used for the purpose of homogenizing the proficiency of the learners. Another type of the test which was used for the purpose of the study was reading comprehension test. This type of test was used as a pre-test to measure the learner's initial subject knowledge in two groups. And finally a reading comprehension test was used as a post-test.

5.Procedure

The following steps were taken in the course of present study:

1. An Oxford Placement Test (OPT) was administered among 100 students in order to make them homogeneous.

2. After dividing the students into three groups of low, intermediate and high, forty intermediate students were selected to take part in the investigation.

3. Forty intermediate students were divided into control and experimental group randomly.

4. Both groups took the same pre-test; a reading comprehension test from Nelson Reading Tests. It was taken to show participants' current level of knowledge.

5. In Experimental group, researcher used simplification techniques mentioned in chapter two, such as breaking the complex and compound sentences, using active voice, changing discourse marker, inversion of clause ordering, rearranging the sentence order, topicalization and detopicalization and etc.

6. In control group none of the above-mentioned techniques were used by researcher. Instead like traditional reading classes texts were translated only.

7. After 10 sessions, both groups took the same post-test. This test was also selected from Nelson Reading Test.

6. Statistical Analysis

The data was analyzed through SPSS; an ANCOVA was run to analyze the data of the study.

Data Analysis and Result

1. Introduction

As it is noted, the present research aimed at ameliorating the statues of effect of textual simplification on learner's reading comprehension ability. So this section enjoys two types of statistics: descriptive and inferential statistics .Descriptive statistics are sets of brief descriptive coefficients that summarizes a given data set, which can either be a representation the entire population or a sample; besides the mean and standard deviation (SD). Inferential statistics are used to make generalizations from a sample to a population prone approach. Inferential statistics have two prone approaches. First sampling must be conducted to be representative of the underlying population. Second the procedures must be capable of drawing correct conclusions about the   population.

2. Descriptive Statistics

Before starting the treatment, an OPT Test was employed to establish the homogeneity of the subjects in terms of language proficiency. It consisted of three parts: structure, vocabulary and comprehension .Initially, 100 male and female students participated in the study. After administration of OPT proficiency tests 40 intermediate students whose scores were between 32 and 79 were selected .Then they were randomly classified into two groups ,one of them was considered as the control group and the other one as experimental group. A descriptive statistical analysis was done on the collected data of OPT proficiency test. The result is shown in the Table 1.

Table 1: Descriptive statistics for the proficiency test

N	Mean	SD
100	42	1

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Table 2 shows the number of students participated in pretest and posttest. It should be noted that no one excluded.

Table 2: Number of students participated in pre-test and post-test Cases

| | Case | | | | | |
| | Included | | Excluded | | Total | |
	N	Percent	N	Percent	N	Percent
Pretest*group	40	100%	0	0%	40	100%
Pretest*group	40	100%	0	0%	40	100%

The descriptive statistical analysis done on the collected data of pre-test and post- test is shown in table 3.

Table 3: Descriptive statistics for the pre-test and post-test

Group		pre-test	post-test
Experimental	Mean	53.1571.6	
	N	20	20
	SD	9.839.78	
Control	Mean	56.9555.85	
	N	20	20
	SD	9.7	9.63
Total	Mean	55.0563.72	
	N	40	40
	SD	11.5212.46	

3. Inferential Statistics

Analysis of covariance (ANCOVA) is particularly appropriate when subjects in two or more groups are found to differ on a pretest or other initial variable. In this case the effects of the pretest and/or other relevant variables are partialed out, and the resulting adjusted means of the posttest scores are compared. Through ANCOVA differences in the initial status of the groups can be removed statistically so that they can be compared as though their initial status had been equated. In this study, in order to investigate the research hypothesis "Textual simplification has no effect on Iranian EFL learners' reading comprehension ability"the differences between mean scores of pretest and posttest of control and experimental group were calculated through ANCOVA. Before running ANCOVA, the following hypothesis were examined:
1. Linear relationship between variables (pre-test and post-test)
2. Equality of variances
3. Homogenity of regression

1. The linear relationship between pre-test and post-test was examined through spread plot, graph 1.

As graph 1 shows, because the regression lines are parallel ,so there is a linear relationship between the two variables, pretest and post-test .It means that the relationship between the two variables in both groups is the same.

2. In order to examine the quality of variances, Levin's Test of Equality of Error Variances was run .It tests the null hypothesis that the error variance of the dependent variable is equal across groups.

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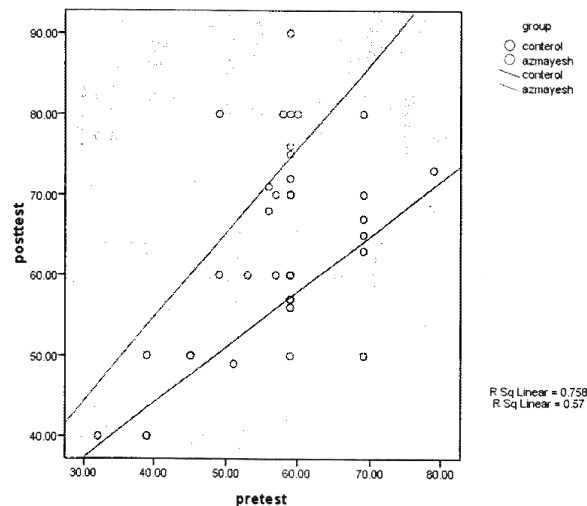
Graph 1: Reading proficiency in control and experimental group from pre-test to post-test

Table 4: Levine's Test of Equality of Error Variances

F	Df1	Df2	Sig
2,38	138		0.13

According to table 4, the calculated F is not meaningful. So there is equality of variances and ANCOVA can be run.
3. The data in table 5 are related to test of homogeneity of regression .Before running covariance between subject's effects of pre-test-group should be investigated.

Table 5: Tests of Between-Subjects Effects

Source	Type III sum of squares	df	Mean squares	F	Sig
Corrected Model	4853.610'	3	1617.8748.2.00		
Group (a)	2.94	1	2.94.09.77		
Pretest (b)	2134.25	1	2134.2563.58.00		
Group* Pretest(a*b)	90.75	1	90.7533.56.11		
Error	1208.36	36	33.56		
Total	168497	40			

As table 5, shows between —subjects effect (a'b) is not significance (F= .09, sig=.76). It shows that the data supports homogeneity of regression .Therefore, covariance should be run just for between-subjects effect of post-test and group to show whether mean scores of two groups are the same or not. The results of this analysis are demonstrated in table 4.

Table 6: Mean and corrected Mean of reading comprehension ability

Source	Post-test		Corrected Mean	
	M	SD	M	SE
Experimental	*85.55*	9.63	*55.520a*	1.32
Control	71.6	9.78	71.930a	1.32

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Table 6 shows the corrected means of dependent variable reading comprehension ability. The data demonstrate that the means of experimental group are upper than control group.

Sum of analysis of covariance (ANCOVA) of reading comprehension ability in experimental and control group after eliminating between-subjects effect is demonstrated in table 7

Table 7: Sum of Analysis of covariance

Source	Type 111 Sum of Squares	df	Mean Square	F	Sig	Partial Eta Squared
Corrected Model	4762.860a	2	2381.43	67.82	.00	.78
Pre-test	2282.23	1	2282.23	65	.00	.63
Group	2687.44	1	2687.44	76.54	.00	.67
Error	1299.11	37	35.11			
Total	168497	40				

As it can be seen, the corrected model (f .00, F—67.82) is statistically significant.

The results *(F76.54,* f.000, Eta=.67) show that there is a difference between two groups .It means that there is a significant difference between experimental and control group. As a result the null hypothesis "textual simplification technique has no effect on learner's reading comprehension ability" will be rejected, so it can be concluded that textual simplification technique has an effect on Iranian Intermediate EFL learner's reading comprehension performance.

To clarify the result, the data will be demonstrated in graph 2.The vertical axis represents the post-test and the horizontal axis represents experimental and control group.
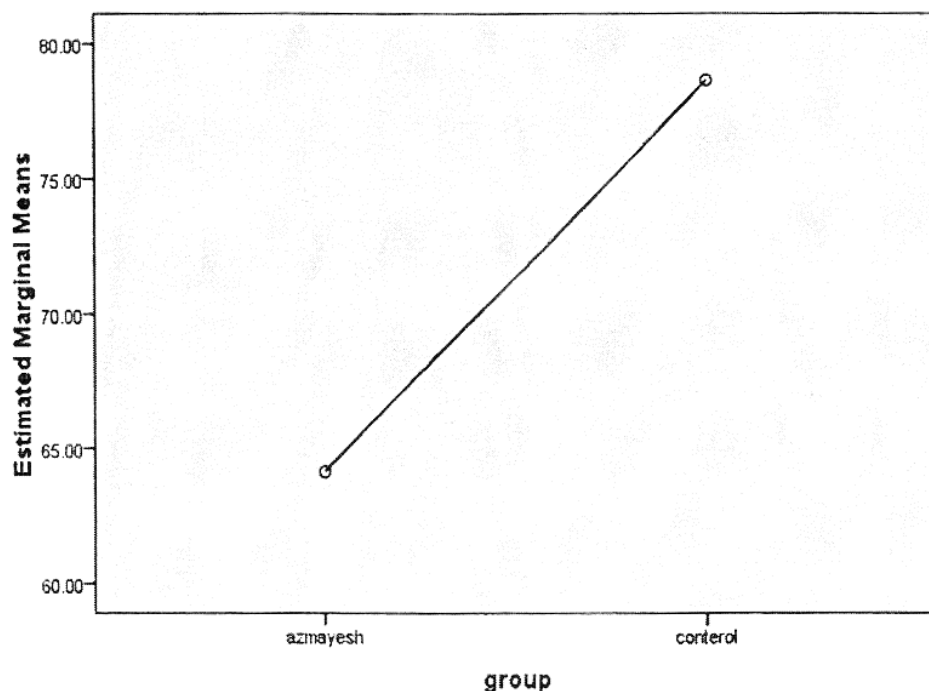
Graph 2: Means of post-test of experimental and control group

The graph shows that there is a significant difference between reading comprehension performance of experimental and control group .It clearly shows that the experimental group who received treatment on the basis of textual simplification technique had better scores on post-test.

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4. Implications

4.1. Pedagogical Implications

Textual simplification is the process of reducing the grammatical complexity of a text, while retaining its information content and meaning. The aim of textual simplification is to make text easier to comprehend for human readers or process by programs.

In this thesis, it was described how textual simplification can be achieved using shallow robust analysis, a small set of handcrafted simplification rules and a detailed analysis of the discourse-level aspects of syntactically rewriting text. It was offered a treatment of relative clauses, apposition, coordination and subordination. It was presented novel techniques for relative clause and appositive attachment. It was argued that these attachment decisions are not purely syntactic. This technique relied on a shallow discourse model and on animacy information obtained from a lexical knowledge base.

It was also showed how clause and appositive boundaries can be determined reliably using a decision procedure based on local context, represented by part-of-speech tags and noun chunks.

It was then formalized the interactions that take place between syntax and discourse during the simplification process. This is important because the usefulness of textual simplification in making a text accessible to a wider audience can be undermined if the rewritten text lacks cohesion. It was described how various generation issues like sentence ordering, cue-word selection, referring-expression generation, determiner choice and pronominal use can be resolved to preserve conjunctive and anaphoric cohesive-relations during syntactic simplification.

In order to perform textual simplification, It was addressed various natural language processing problems, including clause and appositive identification and attachment, pronoun resolution and referring-expression generation. This approach was evaluated to solving each problem individually, and also presents a holistic evaluation of my textual simplification system.

4.2. Implication for Teaching

Simplified texts are commonly used by teachers and students in bilingual education and other language-learning contexts. These texts are usually manually adapted, and teachers say this is a time consuming and sometimes challenging task. Our goal is the development of tools to aid teachers by automatically proposing ways to simplify texts. As a first step, this paper presents a detailed analysis of a corpus of news articles and abridged versions written by a literacy organization in order to learn what kinds of changes people make when simplifying texts for language learners.

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