The effects of structural variables on reading comprehension in expository text of Persian
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Abstract

This study attempts to explore structural variables on reading comprehension of 150 state run university students of psychology and educational fields. The subjects involved were selected through stratified random sampling. This group includes two ways factorial design through random assignment. The variables of this article were investigated in six groups (25 subjects in each group). Each group was asked to recall the text and finish a multiple-choice test. The central instrument included six versions of passage with identical content but different structure. Analysis of recall test indicated that subjects displayed better recall of the text with highly structured passage than others. The outcomes suggested that structural variables have a significant effect on written communication.

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Keywords: structure variables; reading comprehension; expository text

1. Introduction

According to the National Education Association, reading is the gateway to learning in all content areas. Estimates show that textbooks determine 75-90 percent of instructional content and activities in schools across the nation. On the other hand, reviews of textbook materials repeatedly find them to be turgid, poorly organized, and interesting, these are features of writing that are unlikely to enhance learning or motivation (Chambliss, Richardson, Torney-purda, Wikenfeld, 2007).

Decades of research and centuries of experience suggest the text structure—the organization of sentences, paragraphs, and the total discourse—has a powerful effect on comprehensibility. This influence is strongest when the reader attempts to recall and apply the material. In a good design, the guide the choice of elements and how they are linked into a meaningful whole (Chambliss & Cal fee, 1998).

This is made taking use of linkages in an expository text. Among these linkages are rhetorical patterns and functional patterns. The most common rhetorical patterns in textbooks in the opinion of Chambliss and Cal fee (1987) are informative argumentative and

Explanatory in mature. By informative is meant description of special features and facts in respect of subject which is realized in various methods including listing; by argumentative is meant the use of sufficient evidences and proofs for a claim and by explanatory is meant utilization of concrete examples for providing clarification on

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general and abstract issues. It appears that description and explanation are more broadly used and most studies have been dedicated to the aforesaid two patterns (C.F. Roderick & Camborne, 1999, Marzano, 1998, Curtis, 2002, Zang, 2007).

Further rhetorical schema which may be used in an expository text and is yet less often utilized in textbooks is analysis.

This schema has been introduced to the text from the educational experience of the author with teaching in classroom. The reason for utilization of this schema in the present study lies in its effectiveness in the creation of an understanding of the issue in learners. With this schema, first the key words or elements are extracted and defined separately and they are then recombined by a short example.

A second set of linkages joins the sentences, paragraphs, sections, and so on of an exposition into a coherent whole and effects the comprehension of young readers powerfully. we have labeled these linkages "functional devices" because they function to provide the reader with cues to the text structure. They may be essential for smooth communication between an author and reader. Functional devices to include transitions and heading, in addition to introductions and conclusions. Also researches have shown that readers rely heavily on titles, subtitles (Chambliss & Calfee, 1998).

As an instance a research on the importance of titles and subtitles by Johannes, Tobias, Flanders and Ursula (2009) indicated the effectiveness of titling on comprehension of poorly-skilled learners. Moreover, it was revealed that the more frequent are the cues, the higher will be the achievement in learning.

Hence, results demonstrate that a text's linkages have a powerful effect on how well even good readers will understand and remember what they read. Both the rhetorical patterns that link the substance of the text and the functional devices that join the parts of better for worse (Chambliss & Calfee, 1998).

But, the principal question is how should these structural elements be used in an expository text? The major question Raised in the present study is therefore: have the functional devices (rhetorical pattern and titling) any effect on comprehension of subjects?

2. Method

2.1. Participants:
150 B.M students of presently studying at state run universities of Tehran participated in this experiment. They were students of psychology and educational fields. This entire group completed paper pencil comprehension (multiple-choice test) tasks.

2.1.1. Design:
The design was a 2(titling) × 3 (rhetorical pattern). this design is two ways factorial

2.1.1.1 Materials

Texts
The first material utilized in this study consisted of three (6) texts of the same subject matter and in er aspects. The only dimension of difference among the three texts was their rhetorical schemata and titling, that is, the subjects would be described taking use of examples in some text while some about 5-6 pages. The texts were on "material elaborating methods". They were identical texts in that they had similar abstracts, length of paragraphs, the key words repeated in the contexts and some other text would take use of descriptive listing to this order and the third one took benefit of analysis pattern (Defining and outlining important parts of the subject and combining those parts taking help from an example) to elaborate the subject. Preparation and evaluation of the texts took about 9 months.

Comprehension Questionnaire:
A questionnaire consisting of 40 multiple choice questions (4-6 choices) was devised by Anderson and Krawthwohl in accordance with the common contents of the aforesaid texts considering Bloom's revised table of classified specification. The questions in the aforesaid questionnaire were intended the measure levels of knowledge, understanding, application, and analysis among the subjects. The effectiveness of the questions was assessed after an
introductory application of the questionnaire to 180 subjects based on which 11 questions were excluded. Validity coefficient of the aforesaid questionnaire was 0.82 with correct answers receiving 1(one) point and wrong answers receiving zero (without any negative point considered).

3. Results

As observed in table 1, the results indicate that with regard to descriptive statistics the text containing explanation has the greatest effectiveness in comprehension (mean=18.20). While descriptive listing schemata has the least effectiveness (mean=16.28). Moreover, there is not a significant difference between descriptive listing schemata and analytic schemata from the viewpoint of effectiveness on readers’ comprehension. According to table 2 the aforesaid differences (F=3.14) are significant at 0.05 levels. In addition, comprehension scores of lacking title texts is (explanation mean=16.56, description mean=10.40, analytic mean=9.58).This results shown effectiveness of titling. According to table 2 considering that (F=153.69) is significant at 0.05 level, the supposition of effectiveness of titling on comprehension is supported.

4. Conclusion

These findings indicate that:
1- The effectiveness of utilization of concrete examples (Explanation) in development of a there is in conformity with the results reached in the studies made by Chambliss (1995) and Chambliss et al (2007) who concluded that the use of concrete examples would make the issue in hand understandable and familiar to the reader.
2- Description (by providing a list of features of the case in discussion) proved less effective on comprehension of readers. This finding is not in much conformity with the conclusions reached in the studies made by Kitsch and Van Dijke (1978) Van Dijke & kitsch (1983) and Cho have et al (1989). They are instead in line with the findings of Meyer & Freedle91979), Sharp (2002) and Zang(2008).
3- The text in which key parts had been made prominent and in other words the text containing an analysis of key elements with the purpose of development of the major issue, had a fair effectiveness compared the two other texts. It is noteworthy that the structures in question were utilized in this study with a fully different methodology from those applied in foreign works and they were for the first time applied too Persian texts and hence further research is needed to ensure the effectiveness and to support the findings of the present study.
4- It was also revealed that the three texts with titling (with three rhetorical patterns) had superiority over the three other texts lacking titling (with three rhetorical patterns) from the viewpoint of effectiveness on comprehension of readers. This foundation in conformity with the results reached in the studies made by Johannes, Tobias, Flanders and Ursula (2009).

<table>
<thead>
<tr>
<th>Rhetorical pattern</th>
<th>Functional devices</th>
<th>M</th>
<th>SD</th>
<th>N</th>
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<tr>
<td>Explanation</td>
<td>Titling</td>
<td>18.20</td>
<td>2.41</td>
<td>25</td>
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<td></td>
<td>Lacking Title</td>
<td>16.56</td>
<td>4.05</td>
<td>25</td>
</tr>
<tr>
<td>Descriptive</td>
<td>Titling</td>
<td>16.28</td>
<td>3.90</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Lacking title</td>
<td>10.40</td>
<td>3.24</td>
<td>25</td>
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<tr>
<td>Analysis</td>
<td>Titling</td>
<td>0.36</td>
<td>3.45</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Lacking title</td>
<td>9.58</td>
<td>3.95</td>
<td>25</td>
</tr>
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</table>
Table 2. Variance analysis (the effects of rhetorical patterns and titles on Reader's comprehension)

<table>
<thead>
<tr>
<th>Sources of changes</th>
<th>SS</th>
<th>df</th>
<th>M</th>
<th>F</th>
<th>Effect size</th>
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<tbody>
<tr>
<td>Rhetorical pattern</td>
<td>88.09</td>
<td>2</td>
<td>44.04</td>
<td>3.14**</td>
<td>0.042</td>
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<tr>
<td>Functional device (title)</td>
<td>2150.82</td>
<td>1</td>
<td>2150.82</td>
<td>153.69***</td>
<td>0.516</td>
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<td>8.25</td>
<td>2</td>
<td>4.12</td>
<td>0.295*</td>
<td>0.004</td>
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<tr>
<td>Line</td>
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<td>144</td>
<td>13.99</td>
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<tr>
<td>Total</td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p< N.S, **p<0.05, ***p<0.01

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References


