

# Text types, Signals, and Reading Comprehension

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**What is reading comprehension?**

***It is an interactive process between the reader, text, and context***



**Text types: units of discourse having rhetorical and cognitive significance**

- 1. Narrative; dealing with phenomena in time**
- 2. Expository; dealing with analysis and synthesis of a subject**
- 3. Argumentative; dealing with evaluations and relations**

## Perspectives on text types

- **a cognitive perspective;** how texts are represented in mind
- **a developmental perspective:** language learners have greater difficulty with expository than with narrative texts, and, with age, less difference and difficulty is associated with the two (Berman and Katzenberger, 2004) .



## Connectives

cohesive devices whose primary function is to let a listener/reader infer the connections between and among segments of discourse.

- a. **Additives (a continuity function)**, *e.g., moreover, furthermore, besides, etc.*
- b. **Adversatives (contrast relations)**, *e.g., however, on the contrary, nonetheless, etc.*
- c. **Causals (cause-effect relations)**, *e. g., because, so, consequently, etc.*
- d. **Temporals (sequential and temporal relations)**, *e.g., first, secondly, later on, etc.*

## The role of signals in reading comprehension

1. a positive role (Goldsmith, 1990; Chung, 2000)
2. a neutral role (Britton, et al., 1982; Loman and Meyer, 1983)
3. a differential role (Geva and Rayan, 1985; Geva, 2004)

## Research questions

1. Is there any significant difference in the performance of learners with different language proficiency levels in their comprehension of implicitly and explicitly-marked *narrative, expository, and argumentative* text types?
2. Is there any significant correlation between learners' level of language proficiency and their comprehension of implicitly and explicitly marked narrative, expository and argumentative text types?

## **Method**

**1. Participants; 115 Iranian EFL engineering university students  
(33 Low; 50 Mid, 32 High)**

**2. Instrumentation**

- a. Michigan Language Proficiency Test**
- b. Explicit Test Booklet**
- c. Implicit Test Booklet**

**3. Procedure**

- a. trial administration**
- b. final administration**



## Some criteria

- word frequency, number of paragraphs, text type, number of passages for each text type, and readability index.
- Passages from college level English textbooks, Encyclopedia of Encarta (2002), Encyclopedia of Britannica (2002).
- two passages for each text type for the final administration.
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- Each passage was followed by eight questions:
  - Five questions were of a matching
  - three multiple-choice questions on main idea or gist, tone of the passage, micro and macro-propositional understanding

**Table1. Features of the explicit and implicit texts used in the study**

<b>Passage</b>	<b>Word frequency</b>		<b>Paragraph</b>	<b>Flesch Kincaid readability index</b>	
	<b>Explicit</b>	<b>Implicit</b>		<b>Explicit</b>	<b>Implicit</b>
<b>Argumentative1 (Marine parks)</b>	<b>322</b>	<b>294</b>	<b>4</b>	<b>11.6</b>	<b>9.5</b>
<b>Argumentative2 (Animal testing)</b>	<b>297</b>	<b>284</b>	<b>4</b>	<b>10.6</b>	<b>8.1</b>
<b>Expository1 (The question of sacrifice)</b>	<b>330</b>	<b>307</b>	<b>4</b>	<b>10.8</b>	<b>8.7</b>
<b>Expository 2 (The diversity of life)</b>	<b>292</b>	<b>262</b>	<b>4</b>	<b>12</b>	<b>10.8</b>
<b>Narrative1(The question of exercise)</b>	<b>280</b>	<b>262</b>	<b>4</b>	<b>11.7</b>	<b>9.3</b>
<b>Narrative2(The Watergate)</b>	<b>304</b>	<b>288</b>	<b>4</b>	<b>12</b>	<b>9.7</b>

**Table2. Reliability estimates for each instrument**

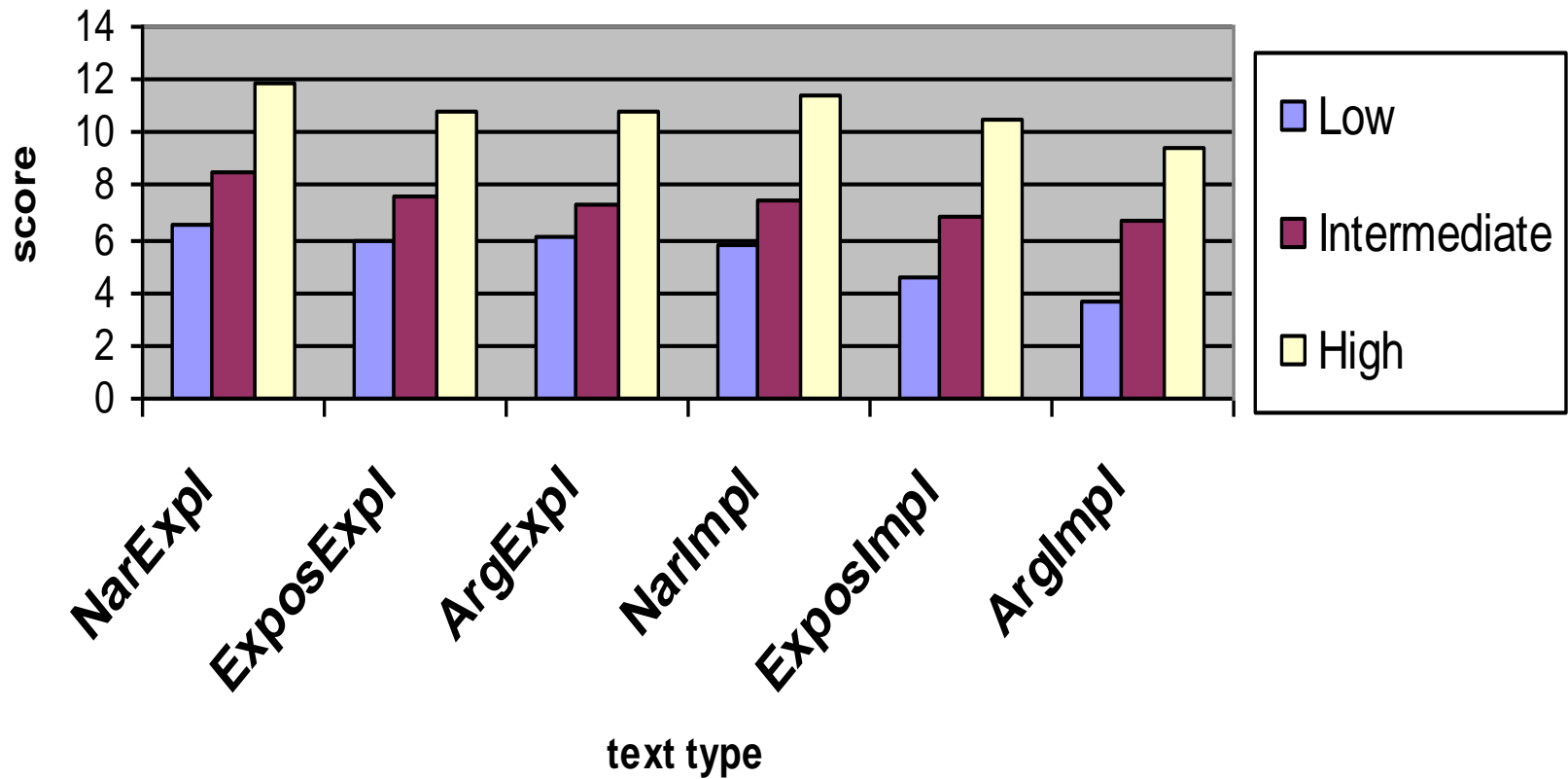
<b>Explicit version</b>	<b>Implicit version</b>	<b>Number of items</b>	<b>Number of cases</b>
<b>Alpha= .81</b>	<b>Alpha= .78</b>	<b>48</b>	<b>115</b>

**Table 3. Correlation between the test booklets and the language proficiency test**

Correlations	Explicit version	Implicit version
Language proficiency	.70**	.72**

## Results

**Graph1. Mean performance of the groups on texts**



**Table 6. Repeated Measure ANOVA across text, version, and learner level**

<b>Source</b>	<b>Mean Difference Significance (Y/N)</b>
<b>Text type</b>	<b>Y</b>
<b>Text type * level</b>	<b>N</b>
<b>Version</b>	<b>Y</b>
<b>version * level</b>	<b>N</b>
<b>Text type * version</b>	<b>N</b>
<b>Text type * version * level</b>	<b>N</b>

**Table 7. Scheffe analysis for multiple comparisons in explicit texts**

Dependent Variable	(I) level	(J) level	Mean Difference Significance (Y/N)
Explicit Narrative	low	inter	Y
		high	Y
	inter	high	Y
Explicit Expository	low	inter	N
		high	Y
	inter	high	Y
Explicit Argumentative	low	inter	N
		high	Y
	inter	high	Y

**Table 8. Scheffe analysis for multiple comparisons in implicit texts**

<b>Dependent Variable</b>	<b>(I) level</b>	<b>(J) level</b>	<b>Mean Difference Significance (Y/N)</b>
<b>Implicit Narrative</b>	<b>low</b>	<b>inter</b>	<b>Y</b>
		<b>high</b>	<b>Y</b>
	<b>inter</b>	<b>high</b>	<b>Y</b>
<b>Implicit Expository</b>	<b>low</b>	<b>inter</b>	<b>Y</b>
		<b>high</b>	<b>Y</b>
	<b>inter</b>	<b>high</b>	<b>Y</b>
<b>Implicit Argumentative</b>	<b>low</b>	<b>inter</b>	<b>Y</b>
		<b>high</b>	<b>Y</b>
	<b>inter</b>	<b>high</b>	<b>Y</b>



## Group Comparison results on explicit/implicit versions

- The difference in the implicit version can be attributed to the absence of connectives.
- Connectives function as procedural devices (Sperber & Wilson's relevance principle)
- Argumentative texts rated the lowest means overall

**Table 9. Correlation analysis between text types and versions for the low group**

Text type	Implicit Nar	Explicit Expos	Implicit Expos	Explicit Arg	Implicit Arg
Explicit Nar	.33	.10	.19	.08	.19
Implicit Nar	1	.62*	.67**	.40	.22
Explicit Expos		1	.76**	.45	.55*
Implicit Expos			1	.38	.58*
Explicit Arg				1	.44
Implicit Arg					1

- Explicit Ns have a low correlation with all the explicit and implicit versions of other text types
- Implicit Ns, have a high correlation with the explicit and implicit E texts (unexpected!)
- Explicit and implicit E texts showed moderate to high correlations with explicit and implicit argumentative texts



Table 10. Correlation analysis between text types and versions for the **intermediate** group

Text type	Implicit Nar	Explicit Expos	Implicit Expos	Explicit Arg	Implicit Arg
Explicit Nar	.44**	.45**	.79**	.44**	.10
Implicit Nar	1	.24**	.32**	.10	.28*
Explicit Expos		1	.34**	.39**	.13
Implicit Expos			1	.20	.08
Explicit Arg				1	.32**
Implicit Arg					1

- Moderate correlations between the explicit and implicit versions in each text type.



**Table 11. Correlation analysis between text types and versions for the high group**

Text type	Implicit Nar	Explicit Expos	Implicit Expos	Explicit Arg	Implicit Arg
Explicit Nar	.91**	.52**	.54**	.48**	.32
Implicit Nar	1	.62**	.59**	.47*	.42
Explicit Expos		1	.25	.49**	.28
Implicit Expos			1	.30	.28
Explicit Arg				1	.38
Implicit Arg					1

- High correlations between the implicit narrative versions and both versions of expository texts
- This pattern was followed in both the low and the intermediate groups



**Table 12. Paired T-test for the low group's performance on text type versions**

<b>Pair</b>	<b>Mean Difference</b>	<b>Mean Difference Significance (Y/N)</b>
<b>Nar expl-impl</b>	<b>.733</b>	<b>N</b>
<b>Expos expl-impl</b>	<b>1.400</b>	<b>Y</b>
<b>Arg expl -impl</b>	<b>2.533</b>	<b>Y</b>



**Table 13. Paired T-test for intermediate group's performance on text versions**

<b>Pair</b>	<b>Mean Difference</b>	<b>Mean Difference Significance (Y/N)</b>
<b>Nar expl –impl</b>	<b>.987</b>	<b>Y</b>
<b>Expos expl-impl</b>	<b>.785</b>	<b>Y</b>
<b>Arg expl –impl</b>	<b>.684</b>	<b>Y</b>

**Table 14. Paired T-test for the high group's performance on text versions**

<b>Pair</b>	<b>Mean Difference</b>	<b>Mean Difference Significance (Y/N)</b>
<b>Narrative explicit –implicit</b>	<b>.381</b>	<b>N</b>
<b>Expository explicit –implicit</b>	<b>.333</b>	<b>N</b>
<b>Argumentative explicit –implicit</b>	<b>1.381</b>	<b>N</b>

- low group failed to use the facilitatory effect of connectives in the narratives (illusion of knowing /passivity hypothesis, Glenberg, et al, 1982).
- Meaningful differences for the low and intermediate groups on the explicit versions of both expository and argumentative texts
- The advanced group's analyzed knowledge and cognitive control in reading seems to make up for the absence of connectors in all the three implicit text types (Bialystock and Ryan, 1985; Geva, 2004).



**Table 15. Repeated Measures ANOVA for the low group on the explicit text versions**

Text		Mean difference	Std. Error	Sig.
Narrative Explicit	Expository Explicit	.467	.723	N
	Argumentative Explicit	.333	.645	N
Expository Explicit	Argumentative Explicit	-.133	.551	N

**Table 16. Repeated Measures ANOVA for the low group on the implicit text versions**

Text		Mean difference	Std. Error	Sig.
Narrative Implicit	Expository Implicit	*1.133	.336	Y
	Argumentative Implicit	*2.133	.524	Y
Expository Implicit	Argumentative Implicit	*1.000	.402	Y

**Table 17. Repeated Measures ANOVA for the intermediate group on the explicit texts**

Text		Mean difference	Std. Error	Sig.
Narrative Explicit	Expository Explicit	.835*	.339	Y
	Argumentative Explicit	1.203*	.328	Y
Expository Explicit	Argumentative Explicit	.367	.308	N

**Table 18. Repeated Measures ANOVA for the intermediate group on implicit texts**

Text		Mean difference	Std. Error	Sig.
Narrative Implicit	Expository Implicit	.633	.320	Y
	Argumentative Implicit	*.899	.349	Y
Expository Implicit	Argumentative Implicit	.266	.390	N

**Table 19. Repeated Measures ANOVA for the high group on explicit text versions**

Text		Mean difference	Std. Error	Sig.
Narrative Explicit	Expository Explicit	1.048	.664	N
	Argumentative Explicit	1.048	.603	N
Expository Explicit	Argumentative Explicit	.000	.724	N



**Table 20. Repeated Measures ANOVA for the high group on the implicit texts**

Text		Mean difference	Std. Error	Sig.
Narrative Implicit	Expository Implicit	*1.000	.442	Y
	Argumentative Implicit	*2.048	.615	Y
Expository Implicit	Argumentative Implicit	1.048	.709	N

- The impact of connective absence seems higher for narrative comprehension



## **Pedagogical Implications**

- a. Raising the students' awareness**
- b. Understanding of textual markers in reading can be expected in other skills**
- c. Focusing on genres and text types as part of the instructional activity**
- d. Textbook writers and developers: conscious of the textual markers which are more difficult to process**

## Further research

1. The writings of good and poor readers
2. Readability formulae
3. Which signals which are more problematic?
4. Corpus linguists

***Thank You***

