

# Qualitative and Quantitative Examination of Text Type Readabilities: A Comparative Analysis

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## Abstract

This study compared 2 main approaches to readability assessment. The quantitative approach applied idea density based on part of speech tagging and compared 3 sets of text types (i.e., narrative, expository, and argumentative) with respect to their ease of reading. The qualitative approach was done through developing questionnaires measuring intermediate EFL learners' perceptions on content, motivation, quality of language, and format of the same text types. The quantitative results indicated significant differences between narrative and argumentative as well as between narrative and expository text types in terms of idea density. In other words, argumentative and expository texts were more readable than narrative ones. Significantly, higher perceived readability for argumentative and lower perceived easiness of expository texts were reported by the participants. It was found that the argumentative texts are more readable than their narrative counterparts. This finding was supported by both qualitative and quantitative approaches to readability assessment. The results indicate that there needs to be a reconsideration of different readability approaches in the selection of texts for their intended readers. Implications for writing instruction and research on readability will be discussed.

**Keywords:** Readability; Idea Density; Qualitative Readability Assessment; Quantitative Readability Assessment; Text Type

### **1. Introduction**

Concerns for increasing the readability indices of teaching materials and matching them to proficiency levels of their intended readers have made researchers plod on in spite of the existence of many intervening variables affecting the readabilities of the produced texts. In fact, in every profession, readability can be a determining factor. For example, the sick need to understand the way they have to use their medicines so that they are not hurt. Similarly, businessmen who need to sell their products to other countries should follow the readability standards for the documents that they attach to the products. No doubt, writers of every profession should consider readability at the center of their attention (Marnell, 2008).

According to McLaughlin (1968), the prediction of readability has two main advantages: First, it helps gain special knowledge to decide on the number of people who can be the readers of a special style, and it aids teachers to select appropriate books for their students. Second, readability helps authors to understand the extent to which their writings are suitable for their intended readers.

Different methods and definitions of readability have been proposed. DuBay (2004) defines readability as what makes a text easier to read. Oosten, Hoste and Tanghe (2011) define it as the degree of easiness on the part of its addressee to understand its message. Oosten et al. (2011) believe that the concept of readability is subjective in nature, and the easiness with which a reader can understand a text depends on his or her background knowledge more than anything else.

Readability studies aim to find the right fit between difficulty levels of the texts and reading abilities of the students (Ulusoy, 2006). Ulusoy refers to the differences among students in terms of experiences and background knowledge about the contents of their course books. Hence, he emphasizes that the aim of readability is to find something that is the most suitable.

Concerning the assessment of readability, Oakland and Lane (2004) introduce three main approaches: qualitative approaches, quantitative approaches, and a combination of these two.

Quantitative assessments of readability are those methods that use some formulae. Oakland and Lane (2004) believe that most of these formulae depend on two qualities that can be measured quantitatively: vocabulary and syntax. Vocabulary can be assessed by considering the amount of familiarity with the words, or the number of letters and syllables in a word. Syntax is usually assessed by considering the length and complexity of the sentences and paragraphs. In their view, using readability formulae, a level of difficulty will be assigned for each text based on which appropriate level of reading material for a test or a specific learner can be decided. Davison and Kantor (1982) believe that formulae not only measure the text difficulty but also are helpful in the production of texts that meet some specific readability levels. Although very useful, the readability formulae are not free from shortcomings. Carrell (1987) believes that readability formulae have two main shortcomings. On one hand, they ignore some textual features such as syntactic complexity, textual cohesion, propositional density, and rhetorical structure of the text. On the other hand, they ignore reader variables such as background knowledge. These formulae ignore the interactive nature of the relationship between readers and texts, the fit between various features of the text such as its rhetorical organization, its content, the perspective of the text and readers' schemata on content and rhetorical organization of the texts, the readers' background knowledge, experiences, and beliefs. These issues are very important, especially when the culture of the readers is different from the culture in which the text comes from.

Chambers (1983) refers to some other problems of readability formulae. First, although they are appropriate for determining difficulty levels of some books, they cannot generally be considered appropriate for determining the difficulty level of one book. Second, the reliabilities of readability formulae are not the same for all types of texts. Third, readability formulae cannot measure some of the reading difficulties which are due to differences in subjects or genres. Fourth, the average measures of readability from formulae can distract attention to a number of other factors that can affect the difficulty levels of texts. Fifth, the formulae cannot be useful to be applied in editing or revising the texts, and finally, the amount of

difficulty which is perceived and the interest factors cannot be considered by readability formulae. Additionally, most of the traditional readability formulae consider only sentence length and vocabulary familiarity and thus, ignore those features of the texts which are essential in determining the difficulty levels of texts (Davison & Kantor, 1982). Due to these shortcomings, quantitative readability assessment is either replaced or implemented with its qualitative counterpart.

Oakland and Lane (2004) posit that some of the factors that can affect the readability of texts cannot be measured through the use of readability formulae (i.e., quantitative methods of assessing readability). The reason is that these methods have limited scope and may create low reliability and validity. For these reasons, the qualitative methods are used to assess some subjective factors such as cognitive aspects and idea densities that can affect the learners' abilities to read.

Ulusoy (2006) maintains that quantitative approaches to readability employ some techniques including cloze tests, checklists, and scales, but qualitative approaches use leveling and checklists. He refers to the combination of qualitative and quantitative approaches that uses benchmark passages and checklists. Quantitative approaches are criticized because of too much attention to the surface features of the text. However, even qualitative methods are also criticized because of their subjectivity.

Given these shortcomings, it seems that for readability assessment, a combination of qualitative and quantitative approaches is more reasonable. The present study focuses on assessment of readability based on propositional, or idea density. In fact, the system of propositional analysis is appropriate for all types of texts and works for utterances that consist of more than one sentence (Horning, 1985). Brown, Snodgrass, Kemper, Herman, and Covington (2008) define idea density (also known as propositional density, or P-density) as the number of expressed propositions divided by the number of words. In terms of semantics, idea density is a measure of the extent to which the speaker is making assertions (or asking questions), rather than just referring to entities. Being applicable to all types of texts, both technical and nontechnical, idea density is a good approach for

examining the reading paces of different discourse modes. This formula does not solely rely on word count; rather, sentence and syllable length is one of the distinguishing features of this formula. Further, it takes into account issues such as coherence and cohesion which could not be assessed using the previous formula which relied on syntax and lexis.

Different text types focus the receiver's attention on different aspects of the communicative situation and are related to different mental activities. Expository text type involves analysis and synthesis of concepts. In such texts, a certain degree of evaluativeness is common, "...diction is fairly emotive, metaphoric expression is not a rarity and a general feel of semi-formality is allowed" (Hatim & Mason, 1990, p. 191). As Weaver and Kintsch (1991) argue, expositions can be analyzed in terms of their basic procedure: analysis (taking a concept and working out its constituent elements) or synthesis (taking the constituent elements of a complex concept and working out a shorter formulation for it).

In argumentative texts, the need to persuade through evaluation is paramount with a predominance of emotive diction, metaphoric expression, and subtle uses of modality (Hatim & Mason, 1990). In such texts, "text forms have a special character and the ordering must reflect a move from the less to the more evaluative" (Hatim & Mason, 1990, p.193). Tirkonnen-Condit (1994) views the production of argumentative text as the cognitive process of problem-solving involving the following structural units: situation, problem, solution, and evaluation. Argumentative texts deal with the mental process of judging. All argumentative texts promote or evaluate certain beliefs or ideas with conceptual relations such as a reason, significance, or opposition frequently.

Narratives construct a pattern of events with a problematic and/or unexpected outcome that entertains or instructs the reader. They tend to induce "visualization" in the reader as part of the reading process (Denis, 1982). They are stories written to entertain. The most common elements found in narrative texts are characters with goals and motives, event sequences, morals, and themes (Graesser,

Golding, & Long, 1991). Narrative texts focus on persons, objects, and relations in time (i.e., mental process of perception in time).

In L2, many reading researchers have emphasized the need to study the differential contribution of text-based characteristics such as genre, text structure parameters, and text type to comprehension (Camiciottoli, 2003; Carrell, 1987). Research is also scarce on lexical and propositional density of information in a text, how ideas are divided in a text, the storyline or flow of arguments in a text, and their impact on text difficulty (Leroy, Helmreich, & Cowie, 2010). This study aimed to examine the impact of the cognitive and rhetorical structure of the texts on the reader's perceptions difficulty. Meanwhile, reader s' perceptions of difficulty of different text types were compared with the difficulty measure of the same texts obtained through a quantitative measure of difficulty (i.e., propositional density). Such an investigation can pave the way for studies aiming to find more detailed criteria for text selection and materials development. Further, if we could find a close fit between more appropriate quantitative and qualitative measures of readability, then it can help us develop more scalable solutions and a readability gold standard. Therefore, the following questions were investigated in this study:

1. Does the quantitative measurement of readability match the perceptions of EFL learners about the difficulty levels of the texts?
2. Are there any significant differences among expository, argumentative, and narrative texts in terms of readability indexes?

## **2. Method**

### ***2.1 Participants***

The participants were 180 Iranian EFL learners (67 males and 113 females) belonging to three main fields of study, (i.e., engineering, basic sciences, and arts) at Iran University of Science and Technology. Based on their own perceived language proficiency on the background questionnaire and the viewpoints of their English instructors, their English language levels were assumed to be intermediate. Their age ranged from 18 to 31. Selection of the participants was mainly based on availability and purposive sampling. The participants were divided

into three groups of 60 students to answer questionnaires concerning the readability of narrative, expository and argumentative text types.

## **2.2 Instruments**

The instruments employed for conducting the present study were CPIDR software (version 3. 2. 2785. 24603), three sets of questionnaires, and 33 texts.

CPIDR is a computer application whose input is copy-pasted or typed document and calculates the number of propositions (based on part of speech tagging based on Liu's, 2004 definition) and the idea densities (as the readability measures) of texts. This software was developed by Brown, Snodgrass, Kemper, Herman, and Covington (2008, p. 540) which was "tested against human raters, with the consensus of two human raters better than the team of five raters agree with each other ( $r(80) = 0.97$  vs.  $r(10) = 0.82$ , respectively."

Further, three sets of questionnaires were designed by the researchers with some adaptations from the questionnaire used in a study by Inegbedion (2009). The first part of the questionnaires included demographic questions on age, degree, and field of study of the participants and their perceived English language proficiency. The second part of each questionnaire included two texts representing a particular text type and 31 items, 8 of which measured learner perceptions on content, 2 format, 10 quality of language and the remaining 11 items motivation constructs (see the Appendix).

The content validities of the questionnaires were approved by three Iranian university professors who were experts in the field of reading comprehension and readability studies. The questions in the three sets of questionnaires were the same and dealt with the learners' perceptions on difficulty levels of texts. The difference among the questionnaires was the texts focused in them. Each questionnaire consisted of two texts of the same type: Questionnaire I included two argumentative; Questionnaire II included two expository; and Questionnaire III included two narrative texts. Apart from their discourse modes, the texts included in each questionnaire were controlled in their idea densities and number of

propositions. Table 1 provides a summary of the features of the texts included in each questionnaire:

*Table 1. Features of the Texts Included in Each Type of Questionnaire*

	Number of Propositions	Number of Words	Idea Density
<u>Argumentative Questionnaire</u>			
Text 1:	228	423	0.53
Text 2:	200	375	0.53
<u>Expository Questionnaire</u>			
Text 1:	224	401	0.55
Text 2:	230	413	0.55
<u>Narrative Questionnaire</u>			
Text 1:	128	245	0.52
Text 2:	139	252	0.55

Finally, to compare the readability levels of the three text types, 33 texts were selected for analysis representing three different types (11 argumentative, 11 expository, and 11 narrative texts). They were selected based on two main criteria. The first criterion was the discourse mode that the texts represented (i.e., text type), and the second criterion was their number of propositions so that they were comparable. The texts were read and analyzed in terms of the prominent features and purposes, and those which met the discourse mode criterion and range of propositions (between 249 and 299) were considered for the study. Table 2 summarizes the features of the selected texts for the study:

*Table 2. Features of the Texts Used in the Study*

Text Type	Number of Propositions	Idea Density	Number of Words
A1	272	0.486	560
A2	264	0.483	547
A3	281	0.491	572
A4	294	0.483	609
A5	296	0.55	538
A6	249	0.486	512
A7	286	0.519	551
A8	268	0.46	582
A9	264	0.512	516



A10	292	0.52	561
A11	260	0.496	524
Average	275	0.498	552
E1	251	0.461	545
E2	269	0.53	508
E3	259	0.481	538
E4	260	0.483	538
E5	272	0.474	574
E6	277	0.549	505
E7	280	0.534	524
E8	282	0.462	610
E9	285	0.52	548
E10	292	0.531	550
E11	299	0.517	578
Average	275	0.503	547
N1	267	0.536	498
N2	263	0.539	488
N3	271	0.54	502
N4	271	0.541	501
N5	272	0.544	500
N6	271	0.527	514
N7	276	0.541	510
N8	275	0.536	513
N9	281	0.547	514
N10	287	0.521	551
N11	292	0.532	549
Average	275	0.536	513

Note: A: argumentative text type; E: expository text type; N: narrative text type

### **2.3 Procedure**

The data collection consisted of three parts: selection of appropriate texts, readability rating of the selected text types based on idea density, and designing questionnaires to get information on the learners' perceptions of the difficulty of each text type. Therefore, this study followed a combination of quantitative and descriptive approaches.

To select appropriate texts, a large sample of texts geared to the level of the participants was selected. Then, they were screened and analyzed with reference to the features related to each text type. Finally, the most representative texts were selected for analysis. The format and presentation of all the selected passages were kept constant. Trying not to manipulate the structures of the texts, the researchers

analyzed a sample of different texts including those in hard copy and in digital format and then comparable texts within the range of 249 to 299 propositions were selected. The propositions were counted based on the definition provided by Liu (2004) applying the CPIDR software (version 3. 2. 2785. 24603).

The readability indices of the text types (i.e., expository, argumentative, and narrative types) were determined through a combination of quantitative and qualitative readability approaches. The quantitative analysis involved employing idea density formula which had been operationalized in the CPIDR application. On the other hand, because readability has to do with the interaction of readers and texts, the readers could not be ignored. Therefore, the questionnaires as one of the qualitative readability instruments were developed and piloted with 21 EFL learners similar to those in the main study. The aims of these questionnaires were to ascertain the learners' perceptions about the readability of the comparable text types. Thus, each questionnaire type was administered to seven EFL learners to discover the intelligibility, appropriateness, wording, topic familiarity, and other problems that the learners potentially had while answering them. Overall, Cronbach's alpha reliability of 0.88 was obtained as a representative of the internal consistencies of the items applicable for the three types of questionnaires.

The developed questionnaires were administered to 180 EFL learners (60 participants answered each questionnaire type). The participants were briefed on how to answer the background questions, read the two texts included in each of the questionnaires, and answer the questions regarding the four abovementioned constructs (i.e., content, format, motivation, and quality of language) with reference to each text type ( see the Appendix). The response format of the questions was of close-ended 5-point Likert scale: 5 (*strongly agree*) and 1 (*strongly disagree*). The average time for answering the questions was set at 20 min for each group.

After calculating the idea densities of the texts, the corpus of the selected text types were compared in terms of idea density running one-way ANOVA (using the SPSS software, version 19). The perceptions of the participants on the difficulty

level of the focused texts in the three sets of questionnaires were also compared using Kruscall Wallis test.

### 3. Results

To compare the perceptions of the participants on the difficulty levels of the three focused text types, Kruscall Wallis test was run. Table 3 is a summary of the results obtained from each set of the questionnaires and their related items. The overall significant differences in perceptions across text types are also presented in the last column:

Table 3. *Responses to Argumentative, Expository, and Narrative Questionnaires*

Constructs and Their Related Items	Argumentative Questionnaire	Expository Questionnaire	Narrative Questionnaire	Chi-Square	Sig.
	Mean Rank	Mean Rank	Mean Rank		
<b>Content</b>					
Item 1	108.71	70.56	92.23	19.706	.000
Item 12	93.17	89.48	88.85	.264	.876
Item 19	112.58	76.20	82.73	19.316	.000
Item 21	110.87	77.69	82.94	18.240	.000
Item 24	113.94	72.73	84.83	22.949	.000
Item 25	108.81	79.79	82.90	13.165	.001
Item 30	108.90	71.27	91.33	18.477	.000
<b>Format</b>					
Item 7	107.44	82.35	81.71	10.796	.005
Item 9	98.86	84.06	88.58	3.006	.222

Quality of Language					
Item 5	115.03	67.23	89.23	28.598	.000
Item 10	100.38	70.85	100.28	14.600	.001
Item 11	111.58	79.12	80.80	18.159	.000
Item 18	126.01	59.47	86.03	56.660	.000
Item 20	83.67	93.65	94.18	1.996	.369
Item 22	108.95	85.58	76.97	13.996	.001
Item 26	108.46	69.44	93.60	19.520	.000
Item 28	86.53	92.60	92.38	.596	.742
Item 29	103.06	70.53	97.92	15.820	.000
Item 31	107.36	91.53	72.62	16.112	.000
Motivation					
Item 2	116.67	64.46	90.38	32.958	.000
Item 3	96.22	83.78	91.51	1.889	.389
Item 4	90.47	93.12	87.92	.332	.847
Item 6	89.73	84.57	97.20	1.920	.383
Item 8	93.55	77.91	100.04	6.218	.045
Item 13	97.94	78.94	94.62	4.962	.084
Item 14	89.16	93.03	89.32	.242	.886
Item 15	94.31	76.86	100.33	7.118	.028
Item 16	90.87	82.42	98.22	3.036	.219
Item 23	102.90	59.99	108.61	36.141	.000
Item 27	91.23	83.94	96.33	1.890	.389

In terms of content, the responses of the participants showed significant differences among the three text types (i.e., argumentative, expository, and narrative) in terms of consistency of language selection with the content, logical sequencing of contents, the relatedness of information to the contents of texts, lucidity of content, up-to-datedness and accuracy of the given information, and sequence of ideas and arguments.

In terms of format, the three text types were perceived to be significantly different in terms of representativeness of the titles.

Concerning quality of language, the text types were significantly different in terms of all the factors, except for the number of relative clauses in the texts and the existence of superfluous words and phrases.

With respect to motivation, the text types were perceived significantly different in terms of the readers' perceptions of their strength while reading the texts, the participants' perceived interests in the texts, the time they spent for reading the texts, and the readers' visualizations while reading the texts.

Mann-Whitney U tests were performed across each pairs of text types as post hoc analyses of the significant differences in each of the constructs under investigation to understand exact points of difference. Therefore, comparison of the learners' perceptions on the readability of expository and argumentative texts is shown in Table 4:

Table 4. *Mann Whitney U Test Between Argumentative and Expository Questionnaires*

Items and Constructs	Mean Rank of Argumentative	Mean Rank of expository	Sum of Ranks Argumentative	Sum of Ranks Expository	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
<b>Content</b>								
Item 1	73.12	47.88	4387.00	2873.00	1043.000	2873.000	-4.345	.000
Item 19	72.57	48.43	4354.00	2906.00	1076.000	2906.000	-4.094	.000
Item 21	71.33	49.68	4279.50	2980.50	1150.500	2980.500	-3.918	.000
Item 24	74.26	46.74	4455.50	2804.50	974.500	2804.500	-4.735	.000
Item 25	70.32	50.68	4219.00	3041.00	1211.000	3041.000	-3.399	.001
Item 30	73.13	47.87	4388.00	2872.00	1042.000	2872.000	-4.327	.000
<b>Format</b>								
Item 7	68.94	52.06	4136.50	3123.50	1293.500	3123.500	-2.891	.004
<b>Quality of Language</b>								
Item 5	75.83	45.17	4550.00	2710.00	880.000	2710.000	-5.090	.000
Item 10	70.12	50.88	4207.00	3053.00	1223.000	3053.000	-3.181	.001
Item 11	71.08	49.92	4265.00	2995.00	1165.000	2995.000	-3.721	.000
Item 18	82.16	38.84	4929.50	2330.50	500.500	2330.500	-7.257	.000
Item 22	68.57	52.43	4114.00	3146.00	1316.000	3146.000	-2.809	.005
Item 26	73.99	47.01	4439.50	2820.50	990.500	2820.500	-4.526	.000
Item 29	71.26	49.74	4275.50	2984.50	1154.500	2984.500	-3.625	.000
Item 31	65.78	55.22	3947.00	3313.00	1483.000	3313.000	-1.930	.054

Motivation

Item 2	78.13	42.87	4688.00	2572.00	742.000	2572.000	-5.806	.000
Item 8	65.88	55.13	3952.50	3307.50	1477.500	3307.500	-1.765	.078
Item 15	66.46	54.54	3987.50	3272.50	1442.500	3272.500	-1.950	.051
Item 23	75.36	45.64	4521.50	2738.50	908.500	2738.500	-4.993	.000

The expository and argumentative text types were perceived to be significantly different in all the items related to content. The mean ranks of all the items in the argumentative texts were higher than those for the expository texts. This verifies the higher perceived readabilities of the argumentative texts than their expository counterparts for the readers. The argumentative texts were perceived to have better match of content and language. In the same vein, argumentative texts were perceived to have more logical sequencing of contents (item 19), more provision of relevant information in content (item 21), more lucid content (item 24), more up-to-date and accurate information (item 25), and more consideration of idea and argument sequencing (item 30).

Considering format, the significantly higher mean rank of the argumentative texts indicated that they were perceived to be more readable. Also, it was understood that the titles of the argumentative texts in terms of representation were perceived to be better than those for the expository texts.

In terms of quality of language, all the items showed significant differences between the expository and argumentative text types. Again, the mean ranks of the argumentative text types were higher than the expository text types in all the significant items related to quality of language. This finding indicates that compared with the expository texts, the argumentative texts had more lucid and clear language (item 5), more personal pronouns to help the readers understand they were addressed (item 10), more tense consistency (item 11), better match between the language of the texts to the linguistic abilities of the learners (item 18), less gender sensitivity (item 22), more learner-friendly language (item 26), shorter and simpler sentences (item 29), and more adequate paragraphing (item 31). Concerning the fact that the argumentative texts had higher ranks in all the items that could

increase the readability of the texts in terms of quality of language, it can be concluded that the argumentative texts were qualitatively more readable than the expository ones.

In terms of motivation, significant differences between the argumentative and expository text types were found. This means that concerning the argumentative texts, the readers thought they were better readers compared with their readings of the expository texts (item 2), were more interested in reading the texts (item 15), and had better visualization of the argumentative texts than the expository ones (item 23). In fact, better visualization of the texts and being more able to read the texts increase the easiness of the texts. In this regard, the argumentative texts had higher readability than the expository ones.

Table 5 shows the results of the second Mann Whitney analysis comparing reader perceptions on argumentative and narrative text types:

Table 5. *Mann Whitney U Test Between Argumentative and Narrative Features*

Items and Constructs	Mean Rank Argumentative	Mean Rank of Narrative	Sum of Ranks Argumentative	Sum of Ranks Narrative	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
<b>Content</b>								
Item 1	66.09	54.91	3965.50	3294.50	1464.500	3294.500	-2.019	.044
Item 19	70.51	50.49	4230.50	3029.50	1199.500	3029.500	-3.427	.001
Item 21	70.04	50.96	4202.50	3057.50	1227.500	3057.500	-3.508	.000
Item 24	70.18	50.82	4211.00	3049.00	1219.000	3049.000	-3.288	.001
Item 25	68.99	52.01	4139.50	3120.50	1290.500	3120.500	-2.886	.004
Item 30	66.27	54.73	3976.00	3284.00	1454.000	3284.000	-2.002	.045
<b>Format</b>								
Item 7	69.00	52.00	4140.00	3120.00	1290.000	3120.000	-2.849	.004
<b>Quality of Language</b>								
Item 5	69.70	51.30	4182.00	3078.00	1248.000	3078.000	3.164	.002
Item 10	60.76	60.24	3645.50	3614.50	1784.500	3614.500	-.089	.929
Item 11	71.00	50.00	4260.00	3000.00	1170.000	3000.000	-3.706	.000
Item 18	74.35	46.65	4461.00	4461.00	2799.00	969.000	-4.920	.000
Item 22	70.88	50.12	4253.00	3007.00	1177.000	3007.000	-3.478	.001
Item 26	64.97	56.03	3898.00	3362.00	1532.000	3362.000	-1.543	.123

Item 29	62.30	58.70	3738.00	3522.00	1692.000	3522.000	-.625	.532
Item 31	72.08	48.93	4324.50	2935.50	1105.500	2935.500	-3.983	.000
<u>Motivation</u>								
Item 2	69.03	51.97	4142.00	3118.00	1288.000	3118.000	-2.875	.004
Item 8	58.18	62.83	3490.50	3769.50	1660.500	3490.500	-.765	.444
Item 15	58.35	62.65	3501.00	3759.00	1671.000	3501.000	-.710	.478
Item 23	58.04	62.96	3482.50	3777.50	1652.500	3482.500	-.867	.386

The results show that the mean ranks of the argumentative texts are significantly higher than those for the narrative texts meaning that compared with the narrative texts, the argumentative texts were perceived to have higher match of language and content (item 1), more logical sequence of content (item 19), more inclusion of relevant information in content (item 21), clearer content (item 24), more up-to-date and accurate information (item 25), and more consideration of idea and argument sequencing (item 30).

As to format, a significant difference between the perceptions of the participants on the well-representation of the titles of the argumentative and narrative texts in the questionnaires was found. This indicates that the titles of the argumentative texts were perceived to have significantly more understandable than those of the narrative texts.

In terms of quality of language, the comparisons showed significant differences between the narrative and argumentative text types. It means that compared with the narrative texts, the argumentative texts were perceived to have clearer language (item 5), more tense consistency (item 11), better match between the language of the texts to the linguistic abilities of the learners (item 18), less gender sensitivity of language (item 22), and more adequate paragraphing.

In terms of motivation, the mean rank of the argumentative text type was more than that for the narrative text type meaning that the readers thought they were better readers of the argumentative texts than the narrative ones (item 2).

Table 6 represents the results of the third Mann Whitney analysis on the difference in perceptions on the features of the expository and narrative text types:



Table 6. *Mann-Whitney U Test Between Expository and Narrative Questionnaires*

Items and Constructs	Mean Rank Expository	Mean Rank of Narrative	Sum of Ranks Expository	Sum of Ranks Narrative	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
<b>Content</b>								
Item 1	53.18	67.83	3190.50	4069.50	1360.500	3190.500	-2.518	.012
Item 19	58.27	62.73	3496.00	3764.00	1666.000	3496.000	-.756	.449
Item 21	58.52	62.48	3511.00	3749.00	1681.000	3511.000	-.694	.488
Item 24	56.49	64.51	3389.50	3870.50	1559.500	3389.500	-1.343	.179
Item 25	59.61	61.39	3576.50	3683.50	1746.500	3576.500	-.302	.762
Item 30	53.90	67.10	3234.00	4026.00	1404.000	3234.000	-2.245	.025
<b>Format</b>								
Item 7	60.79	60.21	3647.50	3612.50	1782.500	3612.500	-.097	.923
<b>Quality of Language</b>								
Item 5	52.57	68.43	3154.00	4106.00	1324.000	3154.000	-2.637	.008
Item 10	50.47	70.53	3028.00	4232.00	1198.000	3028.000	-3.375	.001
Item 11	59.70	61.30	3582.00	3678.00	1752.000	3582.000	-.281	.779
Item 18	51.13	69.88	3067.50	4192.50	1237.500	3067.500	-3.100	.002
Item 22	63.64	57.36	3818.50	3441.50	1611.500	3441.500	-1.057	.290
Item 26	52.93	68.07	3176.00	4084.00	1346.000	3176.000	-2.506	.012
Item 29	51.28	69.72	3077.00	4183.00	1247.000	3077.000	-3.128	.002
Item 31	66.81	54.19	4008.50	3251.50	1421.500	3251.500	-2.121	.034
<b>Motivation</b>								
Item 2	52.09	68.91	3125.50	4134.50	1295.500	3125.500	-2.748	.006
Item 8	53.28	67.72	3197.00	4063.00	1367.000	3197.000	-2.372	.018
Item 15	52.82	68.18	3169.00	4091.00	1339.000	3169.000	-2.514	.012
Item 23	44.85	76.15	2691.00	4569.00	861.000	2691.000	-5.212	.000

In terms of content, the mean ranks of the expository texts were less than those for the narrative texts indicating that compared with the expository texts, the narrative texts were perceived to have higher match of language level and content (item 1), and higher orderly arrangement of arguments and ideas (item 30). Nonetheless, they were perceived not to be different in other content-related features such as logical sequencing of content (item 19), the relevance of

information to the content (item 21), the intelligibility of content (item 24) and accuracy and up-to-datedness of the given information (item 25).

In terms of format, none of the items were significantly different between the expository and narrative text types.

In terms of quality of language, the mean ranks of the expository text types were less than those of the narrative text types in all the items except item 31. This indicates that compared with the expository texts, the narrative texts had clearer language (item 5), more personal pronouns to help the readers understand they were addressed (item 10), better match between the language of the texts to the linguistic abilities of the learners (item 18), more learner-friendly language (item 26), and shorter and simpler sentences (item 29). On the other hand, comparing with the narrative text types, the expository text types had more adequate paragraphing.

Concerning motivation, the mean ranks of all of the items were significant in the narrative text types and were higher than those in the expository ones. This indicates that the readers felt more consonant with the narrative texts than the expository ones (item 2), liked the narrative texts more than the expository ones because the narrative texts made them think more (item 8), the narrative texts were more interesting than the expository ones for the readers (item 15), and the readers were more able to visualize the narrative texts than the expository ones.

### ***3.1 Text Type Comparison in Terms of Idea Density***

In order to compare idea densities of the argumentative, expository and narrative text types, tests of normality were run which indicated normal distribution of the degrees of idea density among the three text types. Then, one-way ANOVA was run to compare idea densities of these three categories of text types. Table 7 summarizes the descriptive statistics and post hoc analysis of the data:

Table 7. *Descriptive Statistics on Idea Density of the Three Text Types*

	<i>N</i>	Mean	<i>SD</i>
Argumentative	11	.49	.024
Expository	11	.50	.032
Narrative	11	.53	.007
Total	33	.51	.028

The analysis of the texts in terms of idea density indicated significant differences among the three text types in terms of idea density:

Table 8. *ANOVA of Texts in Terms of Idea Density*

	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>Sig.</i>
Between Groups	.009	2	.005	8.324	.001
Within Groups	.017	30	.001		
Total	.026	32			

To determine where the loci of the differences lie, post hoc analysis was conducted (see Table 9):

Table 9. *Scheffe Comparison of the Texts in Terms of Idea Density*

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	<i>Sig.</i>
Argumentative	Expository	-.00509	.01217	.909
	Narrative	-.03800	.00776	.001
Expository	Narrative	-.03291	.00992	.017

As can be seen, the argumentative vs. the narrative as well as the expository vs. the narrative text types had significantly different idea densities.

Considering the higher mean of the narrative text type compared with the argumentative and expository text types, it is concluded that the narrative text type has higher idea density than the argumentative and expository text types ( i.e., the

narratives were perceived to be significantly more difficult than the argumentative and expository text types). However, this difference between the argumentative-expository pair was not meaningful.

#### **4. Discussion and Conclusion**

Understanding textual material is a function of a wide variety of text-processing variables. In this study, we focused on propositional density and reader perceptions of text difficulty across different text types. Significant differences were found between the argumentative vs. the narrative and the expository vs. the narrative pairs of texts in terms of idea density and thus, readability. Mean comparisons indicated that compared with the narrative texts, the argumentative and expository texts had lower degrees of idea density. Higher degrees of idea density for the narratives imposed higher cognitive load for the readers. Accordingly, the argumentative and expository texts were shown to be more readable than their narrative counterparts.

The questionnaires' results on the perceptions of the EFL learners on the difficulty levels of the three text types indicated significant differences among learners' perceptions on these texts. The post hoc comparisons led us to the following interpretations:

- In terms of content, format, motivation, and quality of language, the argumentative texts were found to have significantly higher readabilities than their expository counterparts.
- In comparison with the narrative texts, the argumentative texts had significantly higher readabilities. In other words, in terms of content, motivation, and quality of language which affect readability, the argumentative texts had higher mean ranks than their narrative counterparts.
- The narrative texts had significantly lower readabilities than the argumentative texts in terms of format as a determining factor in ease of reading. That is, the narratives were perceived to be more difficult than the argumentative texts.

- The narrative texts were perceived to have significantly higher readabilities than the expository ones in terms of content and motivation. In terms of quality of language, the narrative texts had significantly higher degrees of readability than the expository ones.
- All in all, it is understood that the argumentative texts were perceived as the easiest, and the expository texts were considered the most difficult texts in terms of ease of reading as shown below:

Argumentative > Narrative > Expository

#### ***4.1 Comparison of the Findings of Quantitative and Qualitative Approaches to Readability Assessment***

The comparison of idea densities indicated that the argumentative and expository texts had lower idea densities (i.e., higher readabilities) compared with the narrative texts. This finding is in agreement with the results of the readability analysis using the questionnaires. Nevertheless, the comparison of idea densities of the expository vs. narrative texts based on the questionnaire findings and the readability formula were in contradiction. This indicates that there needs to be a reconsideration of different readability approaches in the selection of different texts for their intended readers. Integration of reader perceptions of difficulty with quantitative formula can be one positive step in determining textual difficulty.

Text readability is affected by text schemata of readers (Carrell, 1987; Kintsch & Van Dijk, 1978). In other words, if readers get familiar with the rhetorical and cognitive structure of the texts, their schemata can fit the text structure, and as a result, their readability perceptions and performances will be improved. When readers are aware of the structures and rhetorical purposes of different text types (e.g., informing, persuading, and entertaining), they will find the textual materials relevant to their goals and purposes. Consequently, they will select, allocate attention to, and remember text segments more efficiently (Lehman & Schraw, 2002) and thus, readability will be increased. As Meyer and Poon, (2004, p. 153) found “training with the structure strategy increased performance on total recall, gist, and top-level structure.”

Contrary to our findings, it is generally believed that narrative texts need lower use of memory and are easier than other text types (Daghir, 2010, Feathers, 2004). Both qualitative and quantitative readability assessments in this study showed lower degrees of easiness for the narrative texts compared with the argumentative texts. In narrative comprehension, different readers are likely to visualize different scenes depending on their prior experience and expectations. It seems that "... it is harder to recall such text accurately because of the contamination from the visualization process" (Alderson, 2000, p. 64). In addition, higher load of moral and cultural involvement in narrations might make understanding these texts not as easy as argumentative or expository texts which are mostly analytic and conceptual and not much affected by cultural issues (Denis, 1982).

The contradiction between the findings of quantitative assessment and qualitative assessments of readability can be partly related to the shortcomings of the readability approaches in considering reader factors such as their interests, familiarity, and background knowledge. The readability formulae are based on the surface structure of the texts; therefore, the readers' beliefs about the difficulty level of such texts than the other ones may be in conflict with the predictions of readability formulae. Hence, the common beliefs concerning higher readabilities of narratives compared with expository texts may not match the findings of readability formulae.

Perceptions of the participants and the quantitative findings showed that the communicative purpose of the texts affects the construction of an efficient configuration of textual schema, and mastery of such text types implies a restructuring of the configuration of such schema in each text type for readers (Urquhart, 1984). More specifically, the present findings provide further evidence that the cognitive and rhetorical structure of the texts significantly affect the readability and comprehensibility perceptions of readers. Some text types tax the working memory more and thus, impose higher processing demands (Meyer, Marsiske, & Willis, 1993). Therefore, in an attempt to find a better fit between the readers and the texts, qualitative assessment based on the total reaction to the text as

done in this study, drawing on expert knowledge, as well as learner judgment seem essential in addition to the classic readability measures based on idea density, word, or syllable count. Such a quest should take the complex interaction between reader perceptions and text type into account and determine the extent to which they contribute to textual readability.

In this study, we compared the perceived readability of the texts with a quantitative measure of them. One limitation of this study is that the relationship between perceived and actual readability procedures was not examined. Further research is needed regarding the reader dimensions of textual intelligibility while reading different text types. It should deal with modes of processing, amount of recall, types of inferences and strategies, and reading time using both online and offline comprehension measurement techniques such as recall protocols, self-paced reading time, think aloud, or cloze tests (Parry, 1996; Wolfe & Mienko, 2007; Yoshida, 2012).

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