

Exploring the Relationship Between Modality and Readability Across Different Text Types

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Abstract

With regard to the relationship between the use of modality and readability levels of texts, 2 opposing views have been raised. The first view endorses direct positive relationship between modality and readability in the sense that the use of modality increases textual understandability. The second view is that the use of modality leads to an increase in the number of words, resulting in readability reduction of the texts. Hence, the present study tries to first compare argumentative, expository, and narrative text types in terms of the use of modalities; then, it explores the possible interplay between metadiscourse use and readability indices of the texts. To this end, 33 representative texts from different discourse modes were analyzed in terms of the degrees of idea density and the frequencies of metadiscourse signals. The results of Spearman rank correlation coefficients did not show any statistically significant go-togetherness between metadiscourse use and readability. Moreover, the focused text types were not significantly different in terms of the use of metadiscourse modalities, except for shift topic and hedging markers. Targeting intelligibility indices and stylistic devices as dimensions of textual quality, the present study offers implications for writing research and materials design purposes.

Keywords: Modality; Metadiscourse; Readability; Idea density; Text type

1. Introduction

Production of texts of high qualities and comprehension indices is one of the main goals of materials development. To this aim, issues such as establishment of logical relationships (including coherence and cohesion) among different parts of the developed texts and consideration of discursive, pragmatic, and linguistic features which can lead to the achievement of such goal are of paramount importance. Meanwhile, dealing with all the related factors in the improvement of a text seems not manageable, at least, by consideration of existent facilities. For this reason, only focus on the most problematic and vital issues seems warranted. This study focuses on the potential interplay between idea density as a basis for readability determination, and

modality markers (i.e., metadiscourse markers) as markers whose contributions lead to the establishment of coherence in English texts (Hyland, 2005; Jones, 2011; Lee, 2002; Vande Kopple, 1985).

Examining the grammatical and lexical features of texts cannot guarantee the high quality of a piece of writing; some other factors such as the functions that a written text is intended to fulfill need to be examined. Considering the functional and pragmatic aspects of texts, one main issue is the structural and logical relationships among different segments of a text which is referred to as coherence at semantic and cohesion at syntactic level. One way for establishing such organizational associations is through the appropriate use of modality.

Being aware of cohesion and coherence as two principal elements of texts and as main features of good writing (Halliday & Hasan, 1976), the writers try to produce well-established pieces of writing. In Halliday and Hasan's (1976) terms, cohesion refers to meaning relations within a text and can be created in a text by those linguistic devices that link parts of that text to each other. They believe that a text or discourse can be cohesive when the interpretation of one part is dependent on the other parts. Halliday and Hasan believe that coherence can be established in two ways: One aspect is with regard to the situational context or register consistency, and the other is the text itself, that is, cohesion in the text. According to McNamara, Louwse, and Graesser (2005), the concepts of coherence and cohesion contribute to the establishment of connection between words and ideas in the texts. Connections associated to cohesion are interpreted in a social or cultural community. They are linguistic components such as words, phrases, and their combinations. On the other hand, coherence is determined by the interaction between the text and its readers. One fundamental problem is that the concepts of cohesion and coherence are not considered in the development of readability formulae (McNamara, et al., 2005).

Among the factors affecting the quality of a piece of writing or text, readability has gained a significant footing. Development of texts which cannot express what in the minds of their writers are can obviously lead to misunderstandings on the part of their readers. In such situations, the importance of readability is highlighted. Moreover, many studies (e.g., Camiciottoli, 2010; Dafouz-Milne, 2008; Liu & Braine, 2005; Taboada, 2006) have focused on the devices that can establish cohesion and coherence in texts to increase their understandability. Among these devices, modality markers have a significant footing. Whereas many studies have been conducted on modality and readability, there is lack of research on any causal and/or relational link between metadiscourse and readability. The need for such analyses comes from the interactive nature of modality and readability. Metadiscourse markers are one of the rhetorical tools that make a text reader-friendly, and as such enable the writer to reach the audience. Metadiscourse kinds convey textual and

interpersonal meanings. Theoretically, they are rooted in Halliday's interpersonal and textual metafunctions. According to Hyland (2005), metadiscourse can either create interactions between addressers and their addressees (i.e., interactive metadiscourse) or establish relationships between addressers and the texts (i.e., interactional metadiscourse). Similarly, readability establishes interactions among texts, their addressees, and addressers. Therefore, there is a need for future studies to consider the potential interconnections of metadiscourse with readability (Crismore & Abdollahzadeh, 2010).

So far, scholars have dealt with the concepts of readability and modality separately. Studies addressing metadiscourse have investigated this concept in terms of its contributions in professional and student writings (e.g., Simin & Tavangar, 2009), its impacts on reading comprehension (e.g., Camiciottoli, 2003; Nemati & Parvaresh, 2008), and its various uses across different cultures (e.g., Abdollahzadeh, 2003, 2011). On the other hand, research studies on readability have focused on specific reader factors (e.g., Jones, 1994), writer factors (e.g., Horning, 1991) and text factors (e.g., Covington, 2008) as having influences and interrelations with the ease of textual readings. Nonetheless, there has been a dearth of studies dealing with the impact of metadiscourse presence in texts with different modes on readers' textual comprehension or on their perceptions of readability of the texts. In this regard, modality especially metadiscourse signals which establish relationships among readers, texts, and writers make the texts meet parts of the prerequisites of high understandability and have the potentiality to be investigated together with readability. The strong focus on shallow textual features like vocabulary and syntax is one of the shortcomings of the traditional readability formulae that have detracted attention from structural features like cohesion and coherence. Therefore, there is a need to reconsider the traditional readability approaches and investigate their relationship with internal features of the texts like their levels of coherence and cohesion and their discourse modes. Accordingly, the present study is an attempt to investigate the potential interplay between metadiscourse and idea density to discover if any possible relationship could be postulated between metadiscourse use and readability. More specifically, it probes into claims about the positive and negative effects of metadiscourse on textual intelligibility. To this end, the following research questions were investigated:

1. Are there any significant relationships between readability and use of modality across expository, argumentative, and narrative text types?
2. Are there any significant differences between expository, argumentative, and narrative texts in terms of the use of metadiscourse markers?

2. Literature Review

2.1 Modality and Metadiscourse

Various definitions of modality, each focusing on some specific dimensions, have been proposed. Based on Fintel (2006), modality is the meaning through which some possibility or necessity is expressed. Modality is mainly carried by a group of auxiliary verbs known as modals such as *will*, *would*, *can*, *could*, *may*, and *should*. Some other expressions such as *possibly*, *probably*, *have (got) to*, and *need to* can also lead to identification of modality (Griffiths, 2006). Further, Lyons (1977) defined modality as the grammatical expression of the subjective opinions, viewpoints, and attitudes of the speakers or writers. As Fintel (2006) states, in addition to auxiliary verbs, the categories addressing evidentiality, mood, and propositional attitude as well as illocutionary force are considered as modals. In this regard, metadiscourse which covers evidentiality, possibility, and necessity (e.g., hedging) is recognized as representative of modality.

Definitions of metadiscourse have focused on its nonpropositional nature. These definitions are interrelated and help us in constructing a comprehensive understanding of the term. Hyland (2005) introduces metadiscourse as the way through which writers express their presence in the text and interact with their readers. He considers metadiscourse as signs by which persuading, informing, engaging and entertaining the addressees are possible. In Hyland's terms, metadiscourse can reflect the social nature of language. This view is supported by some other scholars as well (e.g., Crismore, Markkanen, & Steffenson, 1996; Hyland & Tse, 2004; Taboada, 2006; Vande Kopple, 1985). Based on Fuertes-Olivera, Velasco-Sacristan, Arribas-Bano, and Samaniego-Fernandez (2001), metadiscourse is a central pragmatic feature and a device that makes solidarity between writer and reader. Dafouz-Milne (2008) considers metadiscourse as those features that can help in decoding the messages, sharing the writer's view points, and showing the particular cultural conventions. Blagojevich (2004) considers metadiscourse as a rhetorical feature of academic discourse. As Adel (2006) argued, metadiscourse is a fuzzy and multidimensional concept which is categorized functionally and is dependent on context; therefore, many categorizations of metadiscourse have been put forth (e.g., Crismore, 1990; Hyland, 2005; Vande Kopple, 1985).

In the new version of Hyland's (2005) model, two main dimensions have been identified for metadiscourse: the interactive and the interactional dimensions. For each of these dimensions, Hyland refers to some resources that are, indeed, rhetorical features at the service of some specific functions. The interactive function refers to the way writers show their awareness and interests to produce a text in line with the needs of their learners. In other words, the writers consider the goals of the readers to help them fulfill their needs. The resources that are associated with this

category refer to the organization of discourse and the extent to which the text has been organized based on the needs of the readers. Interactive resources include transitions, frame markers, endophoric markers, evidentials, and code glosses. Transitions (e.g., *in addition, and*) establish relations among main clauses, frame markers (e.g., *finally, my purposes is*) mainly refer to the sequences of actions, endophoric markers (e.g., *see Figure 2*) refer to information expressed in the same text, evidentials (e.g., *according to Einstein*) refer to information expressed in other texts, and code glosses (e.g., *namely, meaning that*) clarify the propositional meanings.

Interactional resources include hedges, boosters, attitude markers, and self-mentions. Hedges (e.g., *possible, might, and perhaps*) are devices that refer to the level of certainty or uncertainty of the writer. These markers show that a statement is based on the writer's way of reasoning and has not been mentioned anywhere else. Boosters (e.g., *clearly, obviously, and demonstrate*) help writers show their certainty among several possible and presented alternatives. These markers indicate the involvement of the writer in the passage. They help authors to make use of mutual experiences of the readers and those of themselves to gain conclusions. Hyland (2005) believes that the degree of commitment to the text and the respect toward its readers are determined by the use of hedges and boosters. Attitude markers refer to the emotional mood of the writer (e.g., *tiredness, interest, and surprise*). They can be expressed in different ways including attitude verbs (e.g., *agree and prefer*), sentential adverbs (e.g., *unfortunately and hopefully*), and adjectives (e.g., *appropriate, logical, and remarkable*). Self-mentions refer to the extent of the writer's presence that can be realized by the use of personal pronouns and possessive adjectives (e.g., *me, mine, we, our, and ours*). Self-mentions include those markers that help the writer explicitly addresses the reader and determine the degree of engagement. Using self-mentions, writers can show the presence of their readers in the text. This focus on readers may have two main functions or goals. First, it meets the expectations of the readers and increases the possibility of readers' involvements in the text. It can also help writers address the readers and consider them as participants of the reading process by the use of some pronouns and interjections such as *you, your, by the way, you may notice*, and so on. Second, it puts the readers in the discourse to understand what their views and interpretations are about it. To put it in another way, it gets the writers understand whether the readers agree or disagree and guide them toward an acceptable interpretation. These aforementioned functions can be performed by questions, directives (mainly imperatives such as *see, note and consider*), obligation modals (such as *should, must, and have to*), and references to shared knowledge.

2.2 Readability

Apart from metadiscourse, another determining factor affecting the quality and comprehension of a piece of writing is readability that can also help writers match the levels of the texts to the abilities of the learners. DuBay (2004) refers to readability as what makes a text easier to read, and McLaughlin (1969) defines readability as the degree to which a specific group of people consider a text to be necessary and understandable.

One principal approach to readability measurement is the idea density of the text (AKA proposition density or P-density). This concept is syntactically defined as the number of expressed propositions divided by the number of words (Brown, Snodgrass, Kemper, Herman, & Covington, 2008; McLaughlin, 1968). However, 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. Idea density is a formula which is applicable for all types of texts—from basic to advanced level and from technical to nontechnical types. Moreover, unlike other readability formula (e.g., lexical density or Flesch-Kincaid readability formula), it is not solely based on word count and sentence length (Covington, 2008). This formula is mainly based on the speed of textual processing in a way that its higher degrees indicate more complexity and slower pace in reading progress.

Two main levels for idea density have been recognized: low and high. Eom (2006) states that low propositional density refers to short texts that have less than 10 major units of speech which have only one major pitch change (i.e., tone units), whereas high density refers to longer passages that have more than 10 tone units. Lidwell, Holden, and Butler (2010) believe that high propositional density includes expressions of multiple meanings within a single phrase which make a text more memorable and easier. Accordingly, propositional density can be estimated by dividing the number of deep propositions by the number of surface propositions. Similarly, McLaughlin (1968) refers to some factors such as typographical, motivational, and logical variables that can affect readability. He puts idea density in the category of logical variables.

Propositions play a principal role in determining the reading difficulties of texts. As Kintch and van Dijk (1978) argue, propositions represent the meanings of the texts using some structural components. Accordingly, each proposition consists of a predicate or a *relational concept* and some other embedded propositions which are called *arguments* that together perform different semantic functions such as goal, source, and reference. Predicates are realized in the surface structures of the texts such as adverbs, verbs, adjectives, and connectives. Further, it is stated that each proposition sets some limitations on its arguments. These limitations are based on the

linguistic rules, the world knowledge, and semantic memories of the readers (Kintch & van Dijk, 1978).

3. Materials

To select appropriate texts, a large sample of instructional ESP/EAP texts used in the EFL context of Iran was collected. 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 first instrument of the study comprised a corpus of 33 texts including 11 narrative, 11 argumentative, and 11 expository texts. The first criterion for text selection was the discourse mode of the texts. We focused on narrative, expository, and argumentative texts as the most commonly used text types. Secondly, to ensure the representativeness of the texts without manipulations on the part of the researchers, a range but not a fixed number of propositions as the second criterion for text selection was considered. This range was found to be between 249 and 299 propositions based on a pilot analysis of the target texts. The range of words across the texts was from 512 to 609, 505 to 610, and 488 to 551 for the selected argumentative, expository, and narrative texts, respectively. Table 1 summarizes the features of the analyzed texts:

Table 1. *Features of the Texts Used in the Study*

Text Type	Number of Propositions	Idea Density	Number of Words
A1	272	.486	560
A2	264	.483	547
A3	281	.491	572
A4	294	.483	609
A5	296	.55	538
A6	249	.486	512
A7	286	.519	551
A8	268	.46	582
A9	264	.512	516
A10	292	.52	561
A11	260	.496	524
Average	275	.498	552

E1	251	.461	545
E2	269	.53	508
E3	259	.481	538
E4	260	.483	538
E5	272	.474	574
E6	277	.549	505
E7	280	.534	524
E8	282	.462	610
E9	285	.52	548
E10	292	.531	550
E11	299	.517	578
Average	275	.503	547

N1	267	.536	498
N2	263	.539	488
N3	271	.54	502
N4	271	.541	501
N5	272	.544	500
N6	271	.527	514
N7	276	.541	510
N8	275	.536	513
N9	281	.547	514
N10	287	.521	551
N11	292	.532	549
Average	275	.536	513

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

Descriptive statistics on the total number of the words, propositions, and degrees of idea density related to each category of text types is also presented in Table 2:

Table 2. *Descriptive Statistics on the Features of the Selected Text Types*

Text Type	Number of Propositions	Degree of Idea Density	Number of Words
Argumentative	3026	5.486	6072
Expository	3026	5.542	6018
Narrative	3026	5.904	5640

The second instrument was the CPIDR software (version 3. 2. 2785. 24603) to measure the idea density and count propositions of the selected texts. This software was devised by Brown, Snodgrass, Kemper, Herman, and Covington (2008) whose

validation against human raters indicated a high correlation of 0.97 between the propositional count of the software and that of 80 human raters. The input of this software is either typed or copy-pasted text, and its propositional count is based on the definition of Liu (2004) who defined propositions as items corresponding to verbs, adjectives, adverbs, prepositions, and conjunctions.

3.1 Procedure

Initially, the discourse mode and number of propositions were considered as the criteria for text selection. Doing a pilot analysis of the most commonly used instructional texts—some of which were digitally available—the researchers selected 150 texts from different discourse modes. These texts were categorized into narrative, expository, and argumentative text types based on their relevant features, and their representativeness was judged based on the expert opinion of two of the researchers' colleagues. Then, the number of propositions for each of these texts was counted applying the CPIDR software. In the pilot analysis, the researchers came up with a range of 249 to 299 propositions as the second criterion for text selection. Then, 33 comparable texts including 11 narrative, 11 argumentative, and 11 expository texts were selected for the analyses and comparisons. These texts which formed a relatively large sample constituted the main corpus of the study.

After the selection of the texts, the metadiscourse markers of the interactive and interactional types and their relevant subcategories were recognized and tabulated for each text type. The model used for the determination of these markers was adapted from Hyland (2005). The texts were functionally analyzed by one of the researchers and an independent rater who had sufficient knowledge of metadiscourse use and function. The two raters' lack of agreement on certain features was sorted out by holding one-on-one meetings to reach a consensus on their judgments about the functions of metadiscoursal elements. The interrater reliability of their ratings was found to be .97.

Finally, readability indices (i.e., idea density) of the three text types were determined applying the CPIDR software. Then, the correlation between the frequencies of metadiscourse modalities and idea densities was calculated through Spearman rank correlation coefficient. Further, chi-square comparisons were made across the three text types in terms of using metadiscoursal features.

4. Results

4.1 Correlations Between Modality and Idea Density

The overall Spearman's rank-order correlation (see Table 3) between the use of metadiscourse and the degrees of idea density showed that, overall, there was a weak negative correlation between the idea densities and metadiscourse frequencies across different text types, $r(33) = -.096, p = .596 > 0.05$:

Table 3. Overall Spearman Rank Correlation Coefficient Between Metadiscourse Use and Idea Density of the Text Types

Spearman's rho		Metadiscourse	Idea Density
	Correlation Coefficient	1.000	-.096
Metadiscourse	Sig. (2-tailed)	.	.596
	<i>N</i>	33	33

Three other Spearman rank correlation coefficients were run to investigate the possible relationships between idea densities and metadiscourse use across the different text types (see Table 4):

Table 4. Spearman Rank Correlation Coefficient Between Metadiscourse Use and Idea Density Across the Different Text Types

Spearman's rho		Metadiscourse	Idea Density
	Correlation Coefficient	1.000	-.286
Argumentative Metadiscourse	Sig. (2-tailed)	.	.394
	<i>N</i>	11	11
	Correlation Coefficient	1.000	.127
Expository Metadiscourse	Sig. (2-tailed)	.	.709
	<i>N</i>	11	11
	Correlation Coefficient	1.000	-.016
Narrative Metadiscourse	Sig. (2-tailed)	.	.963
	<i>N</i>	11	11

As can be seen in Table 4, there is a weak negative correlation between the use of metadiscourse and idea density in the argumentative texts which is not statistically significant, $r(11) = -.286$, $p = .394 > 0.05$. In the same vein, weak correlations between the use of metadiscourse and idea density in the expository and narrative texts were found (for the expository texts: $r[11] = .127$, $p = .709 > 0.05$ and for the narrative texts: $r[11] = -.016$, $p = .963 > 0.05$).

4.2 Text Type Comparisons in Terms of Modality

Table 5 presents the frequencies of metadiscoursal elements in the focused text types:

Table 5. *Frequencies of Metadiscoursal Modalities in the Argumentative, Expository, and Narrative Texts*

Categories	Argumentative	Expository	Narrative	
Code Glosses	51	59	32	
Endophoric Markers	31	39	22	
Evidentials	10	3	1	
Transition Markers	224	181	202	
Interactive	Sequencing	24	27	34
	Label Stages	20	18	16
	Announce	14	5	10
	Goals	14	5	10
	Frame Markers	79	67	65
Total Frame Markers	137	117	125	
Total Interactive	453	399	382	
Attitude Markers	29	16	21	
Boosters	76	68	95	
Self-Mentions	525	394	436	
Interactional	Engagement Markers	202	169	143
Hedges	103	103	122	
Total Interactional	935	750	817	
Total Metadiscourse	1388	1149	1199	

The text types were compared in terms of metadiscoursal modalities. Chi-square test was used to examine the differences in each component and subcomponent of metadiscoursal modalities across the different text types (see Table 6):

Table 6. *Comparison of Argumentative, Expository, and Narrative Text Types in Terms of Metadiscourse*

Categories		Chi-Square Value	df	Sig. (2-tailed)	
Interactive	Code Glosses *Text Type	21.533	18	.253	
	Endophoric Markers *Text Type	17.852	14	.214	
	Evidential *Text Type	8.627	8	.375	
	Transition Markers *Text Type	34.095	24	.083	
	Sequencing *Text Type	14.687	12	.259	
	Label stages *Text Type	5.820	8	.667	
	Frame Markers	Announce Goals *Text Type	12.506	8	.130
	Shift Topic *Text Type	28.044	16	.031	
	Total Frame Markers *Text Type	34.774	28	.177	
	Total Interactive *Text Type	46.509	38	.162	
Interactional	Attitude Markers *Text Type	19.302	14	.154	
	Boosters *Text Type	24.673	26	.538	
	Self-Mentions *Text Type	42.690	38	.277	
	Engagement Markers *Text Type	36.639	28	.127	
	Hedges *Text Type	40.458	26	.035	
	Total Interactional *Text Type	54.826	46	.175	
Total Metadiscourse *Text Type	53.780	46	.201		

The results indicate that the text types under investigation do not have any significant differences in terms of the use of interactive and interactional metadiscourse and their related subcategories except for shift topic ($Sig.= .031, p < .05$) and hedging markers ($Sig.= .035, p < .05$). Post-hoc analyses were conducted to exactly locate the points of difference in the use of shift topic and hedging markers among the expository, argumentative, and narrative texts types (see Table 7):

Table 7. *Post-Hoc Analyses of Text Types in Terms of the Use of Shift Topic and Hedging Markers*

Compared Texts	Categories	Pearson Chi-Square Value	<i>df</i>	<i>Sig.</i> (2-tailed)
Argumentative and Expository	Shift Topic *Text Type	16.130	8	.041
	Hedging *Text Type	14.266	8	.075
Argumentative and Narrative	Shift Topic *Text Type	14.909	6	.021
	Hedging *Text Type	23.907	12	.021
Expository and Narrative	Shift Topic *Text Type	6.994	5	.221
	Hedging *Text Type	18.903	11	.063

As can be seen, compared with the expository texts, the argumentative texts had significantly higher use of shift topic markers (*Sig.* = .041, $p < 0.05$). Similarly, the argumentative texts had significantly higher use of shift topic markers compared with the narrative texts (*Sig.* = .021, $p < .05$). In addition, the narrative texts had significantly higher use of hedging devices compared with the argumentative texts (*Sig.* = .021, $p < .05$).

5. Discussion and Conclusion

The problems connected with misunderstanding of the textual propositional messages are partly because of their low degrees of reading easiness. Writers, however, need to be concerned with the possible methods for presenting their different mental postures towards their expressed propositions to increase understandability of the texts. In so doing, focus on the nonpropositional discourse mainly represented by modality and its various subtypes acts as a prerequisite for guaranteeing textual intelligibility.

The detailed analysis of the interactional metadiscourse indicated higher use of hedges in the narrative than in the argumentative texts. This is a verification of some of the less noticed functions of hedging that can potentially be fulfilled in narrative texts. These common functions in narratives include effective communication (Hyland, 1996), empathy (Mahamood, Reiter, & Mellish, 2007), and establishing indirectness and as a result giving more importance to the mental levels than the verbal levels of utterances (Hinds, 1990, cited in Alijanian & Vahid Dastjerdi, 2012). The implication might be that the functions of metadiscourse markers are also affected by the contexts in which they are employed, that is, in narrations where

interpretations of the utterances are more important than the evidences brought for their reliabilities (Hyland, 2004).

Frame markers are used to connect the sequences in the arguments (Hyland, 2004). These sequences may be announced using markers of sequencing, label staging, announcing goals, and shifting topics. In this study, shift topic markers showed significantly higher use in the argumentative texts compared with the narrative and expository ones. This is somehow connected to the arguers' attempts to win the argument by creating more topics to be discussed than focusing on understanding of the original topic. This acts as a way for getting rid of the probable concerns (Jefferson, 1984). Further, the skill and expertise of the arguer to have some new topics at hand and change the original topic into another one seems to be another technique that makes the argument be continued creatively (Albert & Healey, 2012). Meanwhile, one main point is that higher changes in topics decrease understanding the writers' attitudes by their readers and, thus, endangers coherence (Audrey, 2004). Therefore, any shift in topics should be explicitly pointed using different rhetorical signals. Argumentative texts provide their readers with some claims to be assessed by negotiation and consideration of the existing evidences. Closely related to this feature is the claim posed by Albert and Healey (2012) referring to some gradual shifts that occur between conversational topics in every kind of such assessments; hence, the higher use of shift topic markers in the argumentative texts.

Weak and negative correlations were found between metadiscourse use and idea density in all the three text types. We discovered that, except for the use of hedges and shift markers, the three text types had a rough balance between interactive and interactional forms. Readability formulas are typically employed to estimate text difficulty based on surface-level features (i.e., vocabulary and syntax). The formulas failed to consider structure-level features such as inference load, argument structure, or story line that also influence text difficulty and readers' interpretation of the text. The results of the present study confirm that surface-level and structure-level features are uncorrelated and independent. Thus, using information on surface-level difficulty to estimate structure-level difficulty may not be a justified attempt (Lu, 2002). Nonetheless, this preliminary finding needs to be corroborated with larger corpora to come up with a firm conclusion.

Of course, in examining the relationship between modality and readability, the role of readers' proficiency level in facilitating reading comprehension should not be ignored. High level readers have been found to gain more profit from texts with lower textual devices than from highly signaled texts (McNamara & Kintsch, 1996). Thus, lack of significant correlations between modality and readability may be clear especially in situations where the readers can have enough metacognitive processing and mental representations to process the texts (Degand, Lefèvre, & Bestgen, 1999).

It should be noted that in studies conducted on the relationship between the uses of modality and reading comprehension, some researchers have overgeneralized the findings of reading comprehension studies to those of readability. This interchangeable use of readability and reading comprehension is not acceptable because of two reasons. First, in reading comprehension studies mostly the text (e.g., input propositions, the size) and reader factors (e.g., selection of reading strategies, short term memory) are taken into consideration (Kintch & van Dijk, 1978), whereas readability is the result of the interactions between writers, readers, and the texts. Closely related to the writer's part is the use of modality and its contribution in increasing coherence and cohesion. Second, comprehension can be strengthened through increasing the textual clues as a result of increasing the length of the texts, whereas, as we found in this study, increase in the lengths of the texts decreases readability. Therefore, it is recommended that future studies focus on the relationships between comprehension and readability as two related but different concepts.

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