

***A Comparative Study of Metadiscourse Use in
Research Articles Written by Native and
Non-native Speakers: Is Audience Taken into
Account?***

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Metadiscourse refers to “aspects of a text which explicitly organize a discourse or the writer’s stance towards either its content or the reader” (Hyland, 2005, p. 14). It is an indication of whether the writer has had a particular reader in mind while developing the text. This study aimed to metadiscoursally analyze the articles in two Iranian EFL journals, i.e., *Roshd* and *TELL* which are apparently addressed to different audiences and see how the authors in these journals pay attention to the expected readers. Moreover, to have a clearer picture of the metadiscourse use in academic texts, some articles written by English language native speakers were analyzed both in terms of the metadiscourse use per T-unit and per 100 words. The results indicate that the articles written by native speakers which are mainly addressed to TESOL professionals and researchers include more metadiscourse signals than the articles in the two Iranian journals. Comparing *Roshd* and *TELL*, it appears that *Roshd* authors use more metadiscourse in the abstract sections of their articles, but in the introduction and results and discussion sections, the *TELL* authors used more metadiscourse. The findings of the study imply that Iranian authors in general and *Roshd* authors in particular should pay more attention to their expected readers through more

metadiscourse use.

Key words: *Metadiscourse, interactive resources, interactional resources, Roshd EFL journal, TELL journal, native speakers of English*

INTRODUCTION

Writing as a social and communicative engagement between the writer and the reader involves the writer in producing a text which conveys three lines of meaning, or as Halliday (2004) calls them ‘metafunctions’. These metafunctions are ideational, textual and interpersonal. Ideational metafunction corresponds to content or propositional meaning and according to Halliday (2004) it is something that can be argued, affirmed, denied, qualified, and so on. In other words, proposition, as Hyland (2005) puts it, is “information about external reality; all that which concerns thoughts, actors or states of affairs in the world outside the text” (p. 19). Textual metafunction, on the other hand, consists of features of the language which generate text, relating what is said to the world of readers. The third, i.e., interpersonal metafunction refers to the social role of language (Intaraprawat & Steffensen, 1995). The interpersonal and textual metafunctions are collectively called ‘metadiscourse’, although Halliday himself has never used the term (Hyland, 2004).

Metadiscourse, which is sometimes wrongly defined as discourse about discourse, refers to “language in text which talks about the text rather than propositional content” (Thompson, 2003, p. 6) or, as in Hyland’s (1998) words, metadiscourse refers to those “aspects of a text which explicitly organize the discourse, engage the audience, and signal the writer’s attitude” (p. 437). It is, in fact, one of the main ways of involving writers/speakers and their audiences in mutual acts of comprehension and involvement.

The importance of metadiscourse and its relation to the audience lies in the fact that a text communicates effectively only when the writer has correctly assessed the readers’ resources for interpreting (Hyland, 1999).

Hyland (2005) advises those who articulate meaning to consider its social

impact, the effect it has on those who interpret the meaning, i.e., the readers and the hearers, because an ability to relate to an audience in ways that they will expect and understand means creating texts which see things as they do, so that the texts will be easier to comprehend, more interesting and more likely to create the desired response.

Therefore, it is expected that those who write for different journals keep the audience in mind and provide enough metadiscoursal signals for the readers to clearly understand and interpret the meanings intended to be conveyed.

In Iran, there are two widely-published EFL journals. One is TELL, the journal of the Teaching English Language and Literature Society of Iran, which is mainly addressed to university graduate students and professors. The other is Roshd EFL Journal, published by the Ministry of Education and mainly addressed to English teachers in junior and senior high schools.

The audiences of the two journals are certainly different in terms of needs and background. Therefore, it is expected that those who write for these journals keep these differences in mind and while writing, especially for Roshd, they have to provide enough metadiscoursal features to make the texts understandable and interpretable for their readers. This study aimed at investigating this issue more objectively and coherently.

REVIEW OF LITERATURE

Metadiscourse is, in fact, a dynamic view of language, which offers a framework for understanding communication as a social engagement. With the aid of metadiscourse, a writer is able not only to transform the text into a coherent, reader-friendly prose, but also to relate the text to a given context and convey his/her personality, audience sensitivity or relationship to the message.

Metadiscourse accentuates the role of audience in text development, a role which is important because when a writer has a clear sense of audience, his task of writing becomes easier. In other words, when writers focus on an

audience, they have greater insight into which concepts will be understood and which must be explained and supported; they know how to develop their text for their audience so that it will be “efficient”, i.e., easy to understand and “effective”, i.e., interesting (Intaraprawat & Steffensen, 1995, p. 254). Metadiscourse is an omnipresent aspect of everyday language and it is a major feature of the way we communicate in a range of genres and settings; it allows writers to address their audiences and engages them in a developing dialogue. It allows them to explicitly mark the sentence of the text which increases the cohesion of a text and makes the relationship between sentences, paragraphs and other textual units explicit (Hyland, 1998; Intaraprawat & Steffensen, 1995).

Metadiscourse is especially important for L2 writers because, in addition to the morphology, syntax and lexicon of the language, they are faced with the task of learning the conventions of an L2 discourse community (Intaraprawat & Steffensen, 1995).

Metadiscourse is also argued to be beneficial for students in an EAP course as it enhances their ability to “a) appreciate the strategies of academic writers (in articles, text books, etc.) & of their own lecturers, b) describe the presentations/arguments of other people... c) write academic essays particularly introductions where the writer generally introduces to the reader the various moves (s)he will perform” (Bruce, 1989, p. 2). Steffensen and Cheng (1996) also emphasize the positive effects of learning about metadiscourse on students’ compositions.

Metadiscourse is not an independent stylistic device which authors can vary at will, but it is rather integral to the contexts in which it occurs and is closely linked to the norms and expectations of particular cultural and professional communities. Metadiscourse can therefore be seen as one means of facilitating the social interactions which contribute to knowledge production within academic disciplines. A writer’s sense of audience is crucial, in that gaining acceptance of academic claims involves both rational exposition and manipulation of rhetorical and interactive features. If we view knowledge as ‘the social justification of belief’, it is clear that writers must

consider the reaction of their expected audience, anticipating its background knowledge, processing problems and interpersonal expectations (Hyland, 1998).

In sum, metadiscourse is recognized as an important means of facilitating communication, reflecting writers' attempts to negotiate academic knowledge in ways that are meaningful and appropriate to a certain disciplinary community without which readers would be unable to contextualize a text and writers unable to communicate effectively (Dahl, 2004; Hyland, 1998, 2004, 2005).

Metadiscourse Models

Due to the wide range of meanings which metadiscourse markers can realize, there are a number of different systems for categorization of metadiscourse such as Vande Kopple's (1985, 1997), Crismore (1983, 1984), Crismore, Markkanen and Steffensen (1993) and Hyland's (2004, 2005) models. The analysis done in this study is based on Hyland's model; however, a sketchy review is made of the other aforementioned systems.

Vande Kopple (1985) divides metadiscourse into two major categories of textual and interpersonal markers. Textual metadiscourse is used to organize propositional information in ways that will be coherent for a particular audience and appropriate for a given purpose. Devices or markers in this category represent the audience's presence in the text in terms of the writer's assessment of its processing difficulties, inter-textual requirements and need for interpretive guidance (Hyland, 1999). This category includes subclasses such as text connectives, code glosses, validity markers and narrators.

Interpersonal metadiscourse, on the other hand, "can help us express our personalities and our reactions to propositional content of our text and characterize the interaction we would like to have with our readers about the content" (Hyland, 2005, p. 26). Intaraprawat and Steffensen (1995) used this model in a study on the use of metadiscourse in good and poor ESL essays and they concluded that the good essays showed a greater variety of metadiscourse features within each category than the poor essays.

Crismore (1983) divided metadiscourse into two types: informational and

attitudinal. He defined informational metadiscourse as to “direct readers to an understanding of the primary message by referring to its content and the structure, and to the author’s primary goals” and attitudinal metadiscourse as to “direct readers to an understanding of the authors’ perspective toward the content or structure of the primary discourse” (pp. 15-16). Crismore et al. (1993), however, made substantial revisions to Vande Kopple’s model so that textual metadiscourse includes signals such as logical connectives, frame markers, endophoric markers, evidentials and code glosses, while interpersonal metadiscourse markers include signals such as hedges, emphatics, attitude markers, relational markers and person markers. Hyland (1999) used this model in analyzing the use of metadiscourse in introductory university textbooks and concluded that “the primary goal of textbook authors is to make intellectual content accessible rather than to provide undergraduates with the means to interact effectively with other community members” (p. 21).

The third model for metadiscourse analysis, which is the one used in this study, is suggested by Hyland (2004), and Hyland and Tse (2004) as a new model for metadiscourse analysis in academic writing which builds on three key principles of metadiscourse. These principles are:

1. Metadiscourse is distinct from propositional aspects of discourse.
2. The term ‘metadiscourse’ refers to those aspects of the text that embody writer-reader interaction.
3. Metadiscourse distinguishes relations which are external to the text from those that are internal (Hyland & Tse, 2004, p. 159).

In this model, Hyland and Tse (2004) argue that the distinction between textual and interpersonal metadiscourse is unhelpful and misleading because it overlooks the ways that meanings can overlap and contribute to academic arguments in different ways. They maintain that textuality is a general property of discourse, perhaps similar to syntax, and the writer, by making reference to the text, the audience or the message, indicates his/her sensitivity to the context and makes predictions about what the audience is likely to

know and how they are likely to respond. What is commonly referred to as textual metadiscourse is therefore actually “the results of decision by the writer to highlight certain relationships and aspects of organization to accommodate readers’ understanding, guide their reading and make them aware of the writer’s preferred interpretations. It therefore contributes to the interpersonal features of the text” (Hyland & Tse, 2004, p. 164).

메모 [11]: delete space

In this model, Hyland (2004, 2005) borrows Thompson’s (2001) terms and divides metadiscourse into two major categories of interactive and interactional resources. Thompson uses the term interactive to refer to the writer’s management of the information flow to guide readers through the text. Interactional resources, on the other hand, refer to the writer’s explicit interventions to comment on and evaluate materials.

TABLE 1
A Model of Metadiscourse in Academic Texts (Hyland, 2004, p. 139)

Category	Functions	Examples
Interactive resources		
Help to guide readers through the text		
Transitions	express semantic relations between main clauses	in addition/but/thus/and
Frame markers	refer to discourse acts, sequences, or text stages	finally/to conclude/my purpose here is to
Endophoric markers	refer to information in other parts of the text	noted above/see Fig/in section 2
Evidentials	refer to source of information from other texts	according to X/(Y, 1990) Z states
Code glosses	help readers grasp functions of ideational material	namely/e.g./such as/in other words
Interactional resources		
Involve the reader in the argument		
Hedges	withhold writer’s full commitment to proposition	might/perhaps/possible/about
Boosters	emphasize force or writer’s certainty in proposition	in fact/definitely/it is clear that
Attitude markers	express writers attitude to proposition	unfortunately/I agree/surprisingly
Engagement markers	explicitly refer to or build relationship with reader	consider/note that/you can see that
Self-mentions	explicit reference to author(s)	I/we/my/our

Table 1 above presents a tabular representation of this model in which *interactive resources* are meant to allow the writer to manage the information flow to explicitly establish his/her preferred interpretations. “They are concerned with ways of organizing discourse to anticipate readers’ knowledge and reflect the writer’s assessment of what needs to be made explicit to constrain and guide what can be recovered from the text” (Hyland, 2004, p. 138). These resources include the following subclasses:

1. **Transitions** include a set of devices, mainly conjunctions, used to make additive, contrastive and consequential steps in discourse as opposed to the external world. Examples of transitions are *furthermore, moreover, by the way, similarly, likewise, in the same way, correspondingly, however, in contrast, on the other hand, therefore, consequently, in conclusion, in any case, admittedly, of course, in any case, nevertheless*.
2. **Frame markers** are references to the text boundaries or elements of schematic text structure, including items used to sequence, to label text stages, to announce discourse goals and to indicate topic shifts. Examples of frame markers are *first, then, numbering (1,2, etc.), listing (a, b, etc.), next, at the same time, by way of introduction, to summarize, in sum, I argue here, the paper purposes, there are several reasons, let us turn to*.
3. **Endophoric markers** refer to other parts of the text and so make additional materials salient and available to the reader in recovering the writer’s intentions. Examples of endophoric markers are *previous section, from table 2, in figure 3, this chapter, this part*.
4. **Evidentials** perform a similar role by indicating the source of textual information which originates outside the current text. Examples of evidentials are *to cite X, to quote X, (date)/ (name)*.
5. **Code glosses** signal the restatement of ideational information in other ways. Examples of code glosses are *this is called, this can be defined as, for example*.

Interactional resources, on the other hand, focus on the participants of the interactions and they involve the readers in the argument by alerting them to -

the author's perspective towards both propositional information and the readers themselves (Hyland, 1999). Metadiscourse here is evaluative and engaging, influencing the degree of intimacy and the degree of reader involvement. Interactional resources include the following subclasses:

1. **Hedges** mark the writer's reluctance to categorically state his/her position. Examples of hedges are *it seems, suggests, think, suspect, usually, tentatively*.
2. **Boosters** imply certainty and emphasize the force of propositions. Examples of boosters are *undoubtedly, it is, show, establish, demonstrate, predict, will*.
3. **Attitude markers** express the writer's appraisal of propositional information, conveying surprise, obligation, agreement, importance and so on. Examples of attitude markers are *hopefully, prefer, logical, remarkable, appropriate, important, extraordinary, significant, neglect, limited, small, difficult*.
4. **Engagement markers** explicitly address readers by reader pronouns, personal asides, questions or directives. Reader pronouns are the most explicit way readers can be brought into discourse and they include the second person pronouns *you, your* and the inclusive *we*. Personal asides briefly interrupt the argument to offer a comment on what has been said. Questions arouse interest and encouragement in the reader to explore an issue with the writer. Directives instruct the reader to perform an action or to see things in a way determined by the writer.
5. **Self-mentions** reflect the degree of author presence in terms of first person pronouns and possessives (Hyland, 2004; Hyland, 2005; Hyland & Tse, 2004).

METHODOLOGY

The Corpus

In order to investigate the use of metadiscourse in the articles published in *Roshd* and *TELL*, two Iranian EFL journals, 10 articles which reported on experimental or quasi-experimental studies were selected from each journal.

Furthermore, in order to obtain a picture of academic articles written by native speakers, 5 articles, written by English language native speaker scholars, with the same features were selected from such international journals such as TESOL Quarterly, System and Language Awareness which are usually addressed to TESOL professionals.

Procedure

In order to have a more robust comparison of the use of metadiscourse by Iranian authors writing for the two journals, the study focused on three parts of the research articles which writers have to personally develop, i.e., section where there is little quotation or impact from other writers. These three parts are the abstract, the introduction and the results and discussion.

The articles were read carefully and the metadiscourse markers used by the authors were identified. To make the comparison possible and to avoid the influence of the article length on the number of metadiscourse markers used by each author, two strategies were adopted. First, due to the importance of T-Unit as “an independent clause with all its dependent clauses” in second language studies and text analyses (Bardovi-Harlig, 1992; Gaise, 1980), the articles were read carefully once more and the number of T-Units in each part was calculated. Then the relative number of metadiscourse markers per T-Unit was calculated for each part. In addition to this, since some scholars like Hyland (1999, 2004) have also calculated the use of metadiscourse signals per word, the number of words in each part was also calculated and the relative number of metadiscourse markers per word was calculated. The obtained numbers were further analyzed to find out how Roshd and TELL authors as well as native English speaking authors use metadiscourse signals.

RESULTS AND DISCUSSION

In the initial stage of analyzing the results, the relative length of the main

sections of the research articles in each journal was estimated in terms of T-units.

As table 2 below shows, the abstracts and introductions written for Roshd are the longest (10.5 and 21.1 T-units respectively). The results and discussion sections of Roshd are not, however, as long as the ones written in TELL. Moreover, the table indicates that the results and discussion section of articles written by native speakers is much longer than these sections in both Roshd and TELL. These findings seem to imply that at least in terms article length, Roshd authors pay attention to the requirement of providing more information in the abstract and the introduction sections of the articles which in fact play the key role in motivating and intriguing readers to read the entire article. Another implication may be the need for Iranian authors in both journals to further develop their results and discussion sections and explicate the justifications and the reasons of the findings in more details.

TABLE 2
Relative Length in T-Unit

	ROSHD	TELL	Native
Abstract	10.5	7.3	7
Introduction	21.1	18.6	14.8
Result and Discussion	35.8	46.7	94.4

Table 3 below shows the use of metadiscourse signals per T-unit in different sections of the articles. As the table indicates, in the abstract section, Roshd authors have used more metadiscourse signals than TELL authors. In the introduction section, however, TELL authors have used more metadiscourse. In the results and discussion section, however, there is very little difference in the use of metadiscourse in the two journals. Further inspection of the table shows that native speakers have used more metadiscourse than the Iranian authors in all three sections of the articles. Again this may imply the need for Iranian authors to pay more attention to the audience in both journals, and especially in Roshd.

TABLE 3
General Use of Metadiscourse Signals Per T-Unit

	ROSHD	TELL	Native
Abstract	1.7	1.34	1.8
Introduction	1.34	1.52	1.8
Result and Discussion	1.4	1.36	1.6

Table 4 below provides a more detailed picture of the distribution of metadiscourse signals in the three sections of the articles by each group. As can be seen in the table, there are also differences in the subclasses of metadiscourse preferred by the authors in the different groups.

TABLE 4
Use of Individual Metadiscourse Signals Per T-Unit

	Abstract			Introduction			Results and Discussion		
	Roshd	TELL	Native	Roshd	TELL	Native	Roshd	TELL	Native
Interactive Resources									
Transitions	.31	.16	.17	.2	.15	.22	.17	.08	.21
Frame markers	.32	.24	.37	.13	.19	.25	.12	.15	.12
Endo. markers	.03	.01	0	.04	.03	.05	.18	.15	.1
Evidentials	.07	.05	.11	.38	.33	.37	.09	.11	.12
Code glosses	.13	.1	.34	.08	.09	.13	.09	.09	.09
<i>Total</i>	<i>0.86</i>	<i>0.56</i>	<i>0.99</i>	<i>0.83</i>	<i>0.79</i>	<i>1.02</i>	<i>0.65</i>	<i>0.58</i>	<i>0.64</i>
Interactional Resources									
Hedges	.37	.15	.34	.21	.45	.66	.24	.37	.47
Boosters	.29	.38	.28	.08	.09	.1	.33	.22	.2
Attitude	.1	.02	.11	.13	.07	.09	.09	.07	.1
Engagement	.03	.09	.02	.13	.05	.01	.04	.04	.08
Self-mentions	.01	.01	.08	.05	.01	.01	.03	.04	.08
<i>Total</i>	<i>.8</i>	<i>0.65</i>	<i>0.83</i>	<i>0.6</i>	<i>0.67</i>	<i>0.87</i>	<i>0.73</i>	<i>0.74</i>	<i>0.93</i>

In the abstract section, native speakers have again outperformed Roshd and TELL authors in using both interactive and interactional metadiscourse signals. Comparing Roshd and TELL authors, however, as table 4 shows Roshd authors have used more interactive and interactional resources in the

abstract section, which might indicate their higher level of attention to the audience in this section. In addition, the table shows that while native speakers and Roshd authors have used interactive resources more than interactional resources (0.99 vs. 0.83 and 0.86 vs. 0.8, respectively), TELL authors have used interactional resources more than interactive resources (0.65 vs. 0.56). Keeping the distinction between interactive and interactional resources, it seems that due to the nature and function of the abstract, native speakers, by using more interactive signals, have attempted to anticipate readers' knowledge and organize discourse in a way to help the readers in points where they may need clarification.

Considering the individual metadiscourse signals (see table 4), it was found that while hedges and boosters as interactional signals are the subclasses used more than other signals by Roshd and TELL authors, native speakers have used more frame markers and code glosses, i.e., two interactive metadiscourse signals. This again may indicate the native speakers' attempt to organize the discourse in a way which is more beneficial to readers who lack necessary background knowledge.

Regarding the introduction section, table 4 indicates that native speakers again have outperformed Roshd and TELL authors in using both interactive and interactional metadiscourse signals (1.02 and 0.87 by native speakers vs. 0.83 and .6 by Roshd authors and .79 and .67. by TELL authors). However, there is no difference in the introduction section between the different groups in preferring interactive signals over interactional signals. This might indicate the sensitivity of all groups to the role of the introduction in introducing the readers to and familiarizing them with the concepts and aims of the particular studies. Concerning the individual metadiscourse signals, evidentials are the interactive signals with the highest occurrence and hedges are the interactional signals with the highest occurrence.

Finally, in the results and discussion section, Roshd authors and native speakers have used approximately the same degree of interactive metadiscourse signals (0.65 and .64, respectively) and have outperformed TELL authors (0.58) in this regard. In the interactional part, however, native speakers (0.93)

have outperformed Roshd and TELL authors who have used approximately the same amount of interactional resources (0.73 and .074, respectively). The fact that all groups have used more interactional signals than interactive signals may indicate the authors' attempts to be more evaluative and convey their own perspective to readers. Concerning the individual signals, among the interactive resources, native speakers have used more transitions to show the readers the logical connections between the different parts of the text, while Roshd and TELL authors have used endophoric and frame markers. In the interactional part, while native speakers and TELL authors have used more hedges to avoid forceful conclusions, Roshd authors have used more boosters. This may also be due to the role of audience, in that native speakers and TELL authors, knowing their audience are TESOL professionals, have tried to soften their claims while in Roshd, the authors knowing their readers are teacher who may lack a robust background have made stronger claims.

In addition to analyzing the results in terms of T-units, since some researchers such as Hyland (1999, 2004) have analyzed the use of metadiscourse in terms of the number of words in articles, it was also decided to analyze the findings of the present research on this basis.

Accordingly, the number of words in the three aforementioned sections of the corpus was calculated. The information in table 5, which shows the relative length of each section in words, confirms the information in table 2. The only major difference is the length of the introduction section. While in table 2, the relative length of the introduction sections in articles by native speakers was less than the ones written by Roshd and TELL authors in terms of T-units, based on table 4, the introduction section by native speakers are much longer than Roshd and TELL introductions in terms of the number of words. This indicates that native speakers have used more complex sentences and more dependent clauses in the introduction sections. This can further be proved if we notice that the relative length of T-units in the introduction sections of Roshd and TELL articles are 22.1 and 21.9 words, respectively, while this length in native speaker articles is 24.8 words. So, it seems that Roshd, and especially TELL authors, have been more considerate about

readers and have provided shorter T-units which seem to be easier to process. All other discussions about Table 2 also seem valid about table 5.

TABLE 5
Relative Length of Different Sections of Articles in Words

	ROSHD	TELL	Native
Abstract	242.5	161.1	176.4
Introduction	455.8	430.7	704
Result and Discussion	806.2	976.1	2339.2

Regarding the general use of metadiscourse signals, table 6 confirms the information in table 3. The only difference here is between the use of metadiscourse in the results and discussion sections of articles in TELL and those written by native speakers.

TABLE 6
General Use of Metadiscourse Signals Per 100 Words

	ROSHD	TELL	Native
Abstract	7.2	6.08	7.4
Introduction	6.2	6.5	7.3
Result and Discussion	6.2	6.5	6.5

Although table 3 indicates that native speakers have used more metadiscourse per T-unit in this section of their articles than the authors in TELL journal (1.6 vs. 1.36, respectively), the information in table 6 reveals that both groups have used the same amount of metadiscourse. This difference between the information in table 3 and table 6 can be justified by the fact that the relative length of T-units in the results and discussion sections of native speaker articles is greater than that of TELL articles (29.6 vs. 21.8 words). Here again, therefore, all the discussions about table 3 seem valid.

Regarding the distribution of individual metadiscourse signals per 100 words, the data in table 7 to a large extent corresponds to the information in table 4.

TABLE 7
Use of Individual Metadiscourse Signals Per 100 Words

	Abstract			Introduction			Results and discussion		
	Roshd	TELL	Native	Roshd	TELL	Native	Roshd	TELL	Native
Interactive resources									
Transitions	1.37	.74	.68	.95	.67	.86	.78	.42	.25
Frame markers	1.42	1.11	1.47	.6	.85	.96	.55	.76	.14
Endo. markers	.13	.06	0	.21	.16	.2	.81	.76	.12
Evidentials	.32	.24	.45	1.77	1.46	1.42	.41	.53	.16
Code glosses	.59	.49	1.36	.41	.41	.5	.44	.45	.04
<i>Total</i>	<i>3.83</i>	<i>2.64</i>	<i>3.96</i>	<i>3.94</i>	<i>3.55</i>	<i>3.94</i>	<i>2.99</i>	<i>2.92</i>	<i>0.71</i>
Interactional resources									
Hedges	1.64	.68	1.36	.99	1.9	2.49	1.07	1.77	.48
Boosters	1.28	1.73	1.13	.39	.39	.4	1.47	1.05	.21
Attitude	.45	.12	.45	.63	.32	.4	.42	.33	.16
Engagement	.13	.43	.11	.24	.25	.05	.17	.23	.04
Self-mentions	.04	.06	.34	0	.06	.05	.15	.21	.05
<i>Total</i>	<i>3.54</i>	<i>3.02</i>	<i>3.39</i>	<i>2.25</i>	<i>2.92</i>	<i>3.39</i>	<i>3.28</i>	<i>3.59</i>	<i>0.94</i>

There are only major discrepancies in the results and discussion sections of the articles written by native speakers, which were probably caused by the great mismatch between the relative length of T-units in this section of native speaker articles. Therefore, since T-unit is a more functional unit and metadiscourse is also a “functional category” (Hyland, 2005, p.24), it can be concluded that the analysis per T-units has neutralized the possible role of the length of articles in words and has provided a more valid picture of metadiscourse use by different groups. Moreover, the fact that the information in the word-based analysis (except the few cases explained above) correspond to the information in the T-unit-based analysis may further corroborate the results and the discussion made above.

SUMMARY AND CONCLUSION

The findings of this study can be summarized as follows:

1. In terms of length of the sections:
 - a. In terms of T-units, abstracts and introductions in Roshd are longer than those in TELL and in the three journals in which native speakers published, though the introductions by native speakers are the longest in terms of the number of words.
 - b. Results and discussions by native speakers are much longer than those written by Iranian authors in Roshd and TELL.

2. In the abstract sections:
 - a. Native speakers used the most interactive and interactional metadiscourse signals.
 - b. Roshd authors used interactive and interactional metadiscourse signals more than TELL authors.
 - c. Native speakers used frame markers and code glosses more than any other signals.
 - d. Roshd and TELL authors used hedges and boosters more than any other signals.

3. In the introduction sections:
 - a. Native speakers used the most interactive and interactional metadiscourse signals.
 - b. TELL authors used metadiscourse signals more than Roshd authors.
 - c. Authors in the three groups used interactive signals more than interactional ones.
 - d. Evidentials and hedges were the most frequently used signals by all three groups.

4. In the results and discussion sections:
 - a. Native speakers used the most interactional metadiscourse signals.
 - b. Roshd authors and native speakers used approximately the same number of metadiscourse signals and both used more metadiscourse signals than TELL authors.
 - c. Regarding the interactive signals, native speakers used more transitions while Roshd and TELL authors used more endophoric and frame markers.

- d. Regarding the interactional signals, native speakers and TELL authors used more hedges while Roshd authors used more boosters.

Based on the above-mentioned findings and the discussion in the preceding section, it appears that generally Iranian authors, both in Roshd and TELL, need to take the audience more into account, both in terms of the number of metadiscourse signals used and the type of metadiscourse signals used in each section of their articles. Comparing Roshd and TELL articles, it seems that Roshd authors pay more attention to the audience in writing the abstract sections of their articles. However, regarding the introduction and results and discussion sections, TELL authors paid more attention to the audience by using more metadiscourse signals. Therefore, remembering the difference between the needs and background of the audiences of the two journals, it seems that Roshd authors must pay much more attention to the readers and provide enough support by using many more appropriate metadiscourse signals.

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