

The Use of Metadiscourse Markers in TESOL and Medical Research Articles

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Abstract

Meta-discourse is one of the important concepts in fields of discourse analysis. It deals with the relationship between authors and their texts together with the relationship between writers and their readers (Hyland, 2005). Following the meta-discourse markers model of Hyland and Tse (2004), this study attempts to explore types and frequencies of meta-discourse markers used in Discussion and Conclusion sections of medical and TESOL research articles written in English, and investigate whether there is any significant difference between TESOL and medical RAs in the use of meta-discourse markers. For this purpose, 30 medical research articles and 30 TESOL research articles written in English and published between 2008 and 2015 were selected randomly and used in this study. The results of this study showed that there is a significant difference between TESOL and Medical RAs in the use of evidentials, in the use of code glosses, in the use of attitude markers, and in the use of self-mentions. Moreover, the results of this study indicated that, in both TESOL and medical research articles, hedges and transitions were the most frequently used meta-discourse markers.

Keywords: Meta-discourse, discourse analysis, academic writing, TESOL RAs, Medical RAs

1. Introduction

Meta-discourse is one of the important concepts in fields of discourse analysis. It deals with the relationship between authors and their texts together with the relationship between writers and their readers (Hyland, 2005). As Hyland (2005) states, "metadiscourse stresses that as we speak or write we negotiate with others, making decisions about the kind of effects we are having on our listeners or readers" (p. 3). Moreover, Hyland (2005) and Dafouz-Milne (2008) contended that metadiscourse is a concept which relates to the social engagement in writing or speaking. Additionally, Hyland (2005) claims that metadiscourse shows how authors express themselves in their discourses and present their attitudes about the content and the addressees. Besides, with the use of meta-discourse markers, a writer might transform a dry or difficult text into a coherent, reader-friendly text, and show his or her personality, credibility, audience-sensitivity and relationship to the message (Hyland, 2000). Therefore, due to the effective role of meta-discourse markers in the quality of written texts, this study attempts to explore types and frequencies of meta-discourse markers used in Discussion and Conclusion sections of medical and TESOL research articles written in English, and investigate whether there is any significant difference between TESOL and Medical RAs in the use of meta-discourse markers.

2. Review of Literature

2.1 Meta discourse model

The term metadiscourse was introduced by Zellig Harris in 1959. Later, a number of researchers studied on meta-discourse markers and proposed different classifications for meta-discourse markers. For example, Vande Kopple (1985) used Lautamatti's (1978) classification and Williams' (1981) work and introduced two main types of metadiscourse markers including textual and interpersonal. These two main groups were also divided into seven subcategories including text connectives, code glosses, illocution markers, validity markers, narrators, attitude markers, commentaries. However, this taxonomy was somewhat vague and it was not easy for the researchers to use it (Hyland, 2005). Furthermore, Crismore, Markkanen, and Steffensen (1993) attempted to modify Vande Kopple's (1985) metadiscourse taxonomy. Despite some changes which were done by them, the problem of vagueness was not solved. To eliminate the previous problems, Hyland and Tse (2004), introduced a new classification. They divided metadiscourse markers into two main categories: : interactive and interactional. Interactive metadiscourse markers consist of transitions (additive, contrastive and consequential), frame markers, endophoric markers, evidentials and code glosses; interactional metadiscourse markers also include hedges, boosters, attitude markers, self- mentions and engagement markers.

2.2 Previous studies

A number of studies were conducted on the use of meta-discourse as an essential element of writing. For example, Hyland (2004) explored the use of meta- discourse markers in L2 postgraduate writing. For this purpose, he analyzed 20 master and 20 doctoral dissertations from each of the six academic discipline including electronic engineering, computer science, business studies, biology, applied linguistic and public administration. The results of his study showed that hedges and transitions were the most frequently used meta-discourse markers followed by evidential and engagement markers.

Additionally, Hyland and Tse (2004) explored the use of meta discourse markers in L2 post graduate dissertations. In their study, they selected 240 dissertations from six academic discipline including electronic engineering, computer science, business studies, biology, applied linguistic and public administration. The results of their study showed that among meta discourse markers, hedges, transitions, and engagement markers had the highest frequencies.

Similarly, the results of other studies confirmed that transitions and hedges were used frequently in academic writing. For example, Sultan (2011) examined the use of meta discourse markers in English and Arabic research articles written by native speakers of English and Arabic within the field of linguistics. The results of his study showed that transitions and hedges had the highest frequencies in both English and Arabic research articles.

Jalilifar and Kabezadeh (2012) explored the use of metadiscourse markers in introduction and method sections of applied linguistic research articles. In this study, Sixty-five RAs from international journals published 2005 onward were analyzed. The results of this study showed that transitions were used more than the other groups of meta discourse markers.

Similarly, the results of Akbas(2012) study on the use of metadiscourse markers in master dissertation abstracts revealed that among meta discourse markers, transitions were the most common meta discourse markers. Besides, the results of Mirshamsi and Allami's(2013) study showed that transitions and hedges and endophoric markers had the highest frequency in English M.A. theses written by native English speakers in the field of TESOL . Therefore, as the results of these studies showed transitions and hedges are essential meta discourse markers which are used in academic writing.

Besides, Attarn (2014) investigated the use of interactive and interactional meta discursive features in ESP articles written by Iranian and English native speakers. The results of her study showed transitions and hedges were used more than other groups of meta discourse markers in ESP articles written by Iranian and English native speakers.

3. The Present Study

Following the meta-discourse markers model of Hyland and Tse (2004), this study aims to answer to following research questions.

1. What are the types and frequencies of meta –discourse markers used in Discussion and Conclusion sections of medical and TESOL research articles written in English?
2. Is there any significant difference between TESOL and Medical RAs in the use of meta-discourse markers?

4. Method

4.1 Corpus

30 medical research articles and 30 TESOL research articles written in English and published between 2008 and 2015 were selected randomly and used in this study. Furthermore, these medical and TESOL research articles were downloaded from Science Direct data base.

4.2 Procedure

In this study, the Discussion and Conclusion sections of medical and TESOL research articles were carefully read in order to identify the types of meta-discourse markers based on the model of Hyland and Tse (2004), and calculate the frequency of meta-discourse markers. To increase the reliability of the results, the chosen articles were double-checked. Since the number of words used in Discussion and Conclusion sections of medical and TESOL research articles were

unequal, the frequencies of meta-discourse markers occurred per 1000 words were calculated. Additionally, Chi-square tests were used in order to explore whether the observed differences regarding the use of meta-discourse markers in medical and TESOL research articles were statistically significant.

4.3 Data Analysis

In the following sentences some examples of meta-discourse markers were presented to illustrate how academic writers used meta-discourse markers in medical and TEFL research articles.

4.3.1 Interactive resources

Interactive resources deal with the ways of organizing discourse (Hyland & Tse, 2004).

4.3.1.1 Transitions

Transitions which comprise a range of devices (e.g. but, thus, and) which mainly represent additive, contrastive, and consequential steps in the discourse (Hyland & Tse, 2004).

4.3.1.1.1 Additive

An example from TESOL RAs: "**Additionally**, the NISEG members showed higher scores in the Structure of Internet-Specific Knowledge dimension (Karimi, 2014, p.8)".

An example from medical RAs: "**Furthermore**, ethnic and environmental variations should be considered for interpretation on the discrepancy of incidence rates among countries (Zheng et al, 2015, p.61)".

4.3.1.1.2 Contrastive:

An example from TESOL RAs: "From the immediate post-test to the delayed post-test in the study presented here, the scores for the focused indirect WCF group atrophied; **however**, this was not at a significant level (Frear & Chiu, p.31)".

An examples from medical RAs: "**However**, inhibition of global phosphatase activity by PIC, which inhibits protein tyrosine phosphatases (PTPs), serine threonine phosphatases, acid phosphatases and alkaline phosphatases, completely abolished FLLL12-induced DR5 expression (Haque et al, 2015, p.170)".

4.3.1.1.3 Consequential

An example from TESOL RAs: "**Thus**, students may have treated blogs as private zones (Miyazoe & Anderson, 2010, p.193)".

An example from medical RAs: "**Thus**, limited coverage of cancer registry should firstly be taken into account (Zheng et al, 2015,p.60)".

4.3.1.2 Frame markers

Frame markers (e.g. my purpose here is to, to conclude, firstly, finally) show text boundaries or elements of schematic text structure. Besides, they were used for sequencing, marking text stages, announcing discourse goals, and showing topic shifts (Hyland& Tse, 2004).

An example from TESOL RAs: **Firstly**, as with all studies, it is essential to replicate the present study to determine the applicability of the results in other context(Carreira, 2011, p.99).

An example from medical RAs: **Finally**, considering the multiple comparisons resulting from the stratification of the survival data by cancer site, sex and partially by age , some of the statistically significant differences in survival between district types may have occurred by chance alone(Nennecke et al., 2014, p.264).

4.3.1.3 Endophoric markers

Endophoric markers (e.g. Noted above; see figure 3; in section 2) make the additional material accessible to the readers. They refer to information which is presented in other parts of the text (Hyland& Tse, 2004).

An example from TESOL RAs: "So far, I have examined the features of the collaborative lesson preparation at the schools of the four participants, its influence on teacher autonomy, and how the collaboration and autonomy jointly affect teacher development, which correspond to the research questions raised **in Section 2** (Xu,2015, p. 146)".

An example from medical RAs: "In conclusion, as **shown in Fig. 8**, accompanied by the rapid growth of cervical cancer, hypoxia stimulates the production and release of TSLP(Xie et al, 2015,p.116)".

4.3.1.4 Evidentials

Evidentials (e.g. Z states, according to X) refer to sources of information which are outside the current text (Hyland& Tse, 2004).

An example from TESOL RAs: "**According to** Mokhtari and Reichard (2002), the strategies in the GLOB subscale are general reading strategies that are focused at preparations for reading to occur (Dabarera et al., 2014, p.470)".

An example from medical RAs: "There were 221 million floating populations and 6.1 million left-behind children, accounting for approximately 16% of the Chinese total population, **according to** Chinese Census in 2010(Zheng et al, 2015,p.60)".

4.3.1.5 Code glosses

Code glosses (e.g. namely; for example; such as) help readers understand functions of ideational information (Hyland& Tse, 2004).

An example from TESOL RAs: "As in other studies (**e.g.**, Dornyei et al., 2006; Sung and Padilla, 1998), the girls in this study are more motivated to learn EFL than boys (Carreira, 2011, p.97)".

An example from medical RAs: "Other signaling co-receptors belonging to the Sema family (RON, Plexins), **such as** the RET and HER family (EGFR, HER2, HER3) members, can crosstalk with c-Met, even in an HGF-independent manner, providing an alternative way to induce proliferation, survival and invasive growth (Marano et al., 2015, p.33-34)".

4.3.2 Interactional resources

Interactional resources deal with the readers' involvement in the argument (Hyland & Tse , 2004).

4.3.2 .1 Hedges

Hedges (e.g. Might; perhaps; about) are used by writes to avoid full commitment to propositional information (Hyland& Tse, 2004).

An example from TESOL RAs: "However, it **appears** that greater peripheries between the teaching and learner CoPs do not necessarily relate to better educational outcomes (Zhou, 2015, p.43)".

An example from Medical RAs: "The decline continued throughout 1980s, **possibly** due to the addition of anthracyclines (Narod et. al ,2015,p.15)".

4.3.2 .2 Boosters

Boosters (e.g. In fact; it is clear that, definitely, certainly, really) show certainty regarding propositional information. (Hyland& Tse, 2004).

An example from TESOL RAs:" **In fact** , the present study demonstrates that naivety in the learners' epistemological stance, as conceptualized by conventional models of personal epistemology, is associated with gains in their academic achievement in hypermedia contexts(Karimi,2014,p.8)".

An example from medical RAs: "There is **certainly** an argument for coding deaths from cancer treatment as cancer mortality (Dekker et al., 2014, p. 1483)".

4.3.2 .3 Attitude markers

Attitude markers (e.g. I agree; surprisingly) indicate the writer's attitude to propositional information. For example, they can show the writer's surprise, obligation, agreement, importance, and so on regarding the propositional information (Hyland& Tse, 2004).

An example from TESOL RAs: "**Surprisingly** enough, male learners apparently showed more preference for female topics(58% versus 42% in frequency)(Abdorahimzadeh , 2014, p. 77)".

An example from medical RAs: "**Unfortunately**, for our study, we could not analyze local control based on both of the response to EBRT and applicator laterality with in a tumor, as we did not have a planned response evaluation or 3-D planning (Toita et al.2012, p. 2140)".

4.3.2 .4 Engagement markers

Engagement markers (e.g. Consider; note; you can see that)are used for building relationship with reader(Hyland& Tse, 2004).

An example from TESOL RAs: "Just **consider** the enormous impact SBI could have in **your** context(McMullen, 2009, p.429)".

An example from medical RAs: Differential distribution pattern in a specific country or region is one of the important ethnic factors which **should be considered** first when a new agent is to be registered to a new region for the treatment of epithelial ovarian cancer(Sung et al,2014, p. 152).

4.3.2 .5 Self-mentions

Self-mentions (e.g. I, we, my, me, our) show explicit reference to writer(s) (Hyland& Tse, 2004).

An example from TESOL RAs: "Indeed, **our** study indicates that teachers are not always aware of the quantity and types of feedback they give to their students(Roothoof, 2014, p.74)".

An example from medical RAs:" **Our** findings clearly demonstrate that FLLL12 induces apoptosis and is 5–10-fold more potent than the parental compound curcumin, depending on the cell lines (Haque et al.2015, p. 172)".

5. Results

As shown in Table 1, in TESOL articles, hedges(45/54%) and transitions(37/26%) are the most frequently used meta-discourse markers. Besides, evidentials(5/29%), code glosses(3/73%), engagement markers(2/19%), self-mentions(2/19%), frame markers(2/15%), boosters(0/85%),

endophoric markers(0/63%), and attitude markers(0/11%) are the other used markers from the high to the lowest frequencies.

Table1.

Meta-discourse markers in TESOL RAs

MDs in TESOL RAs	Frequency	MDs used per 1000 words	Percent
transitions	1576	372/66	37/26
Frame Markers	91	21/51	2/15
Endophoric markers	27	6/38	0/63
Evidentials	224	52/96	5/29
Code Glosses	158	37/36	3/73
Hedges	1926	455/42	45/54
Boosters	36	8/5126	0/85
Attitude markers	5	1/18	0/11
Engagement markers	93	21/99	2/19
Self-mentions	93	21/99	2/19
Total Number	4229	1000	100

Table. 2.

Meta-discourse markers in Medical RAs

MDs in Medical RAs	Frequency	MDs used per 1000 words	Percent
transitions	1179	398/04	39/80
Frame Markers	51	17/21	1/72
Endophoric markers	24	8/10	0/81
Evidentials	32	10/80	1/08
Code Glosses	47	15/86	1/58
Hedges	1301	439/23	43/92
Boosters	45	15/19	1/51
Attitude markers	21	7/08	0/70
Engagement markers	37	12/49	1/24
Self-mentions	225	75/96	7/59
Total Number	2962	1000	100

Furthermore, as shown in Table 2, In medical research articles, hedges(43/92%) and transitions(39/80%) have the highest frequencies. Additionally, self-mentions(7/59%) , frame markers(1/72%), code glosses(1/58%), boosters(1/51%), engagement markers(1/24%), evidentials(1/08%), endophoric markers(0/81%), and attitude markers(0/70%) are the other used markers from the high to the lowest frequencies.

Table 3.

Chi-Square analysis of MDs in TESOL and Medical RAs

MDs in TESOL and Medical RAs	Chi-square (X ²)	df.	Sig.
transitions	.878	1	.349
Frame Markers	.421	1	.516
Endophoric markers	.286 ^a	1	.593
Evidentials	27.563	1	.000
Code Glosses	8.321	1	.004
Hedges	.286	1	.593
Boosters	1.500	1	.221
Attitude markers	4.500	1	.034
Engagement markers	2.941	1	.086
Self-mentions	29.755	1	.000

As table 3 shows, there is a significant difference between TESOL and Medical RAs in the use of evidentials (sig=.001), in the use of code glosses (sig=.004), in the use of attitude markers (sig=.034), and in the use of self-mentions (sig=.001).

6. Discussion and conclusion

Generally, this study aimed to explore the types and frequencies of meta –discourse markers used in discussion and conclusion sections of medical and TESOL research articles written in English, and to investigate whether there is any significant difference between TESOL and medical RAs in the use of meta-discourse markers.

The results of this study indicated that, in both TESOL and medical research articles, hedges and transitions were the most frequently used meta-discourse markers. Similarly, the results of other studies such as Hyland (2004), Hyland and Tse (2004), Sultan (2011), Mirshamsi and Allami's(2013) ,and Attarn (2014) confirmed that transitions and hedges had the highest frequencies in academic writing.

In this study, high use of hedges in TESOL and medical research articles may relate to important functions of these metadiscourse markers. For example, hedges are used by writers to

avoid full commitment to propositional information and to avoid presenting the propositional information categorically (Hyland & Tse, 2004). In this way, the author can save his/her face in a case of any possible falsification of his/her judgments. Additionally, hedges can indicate politeness in the interaction between writer(s) and readers (Myers, 1989). Moreover, hedging is a rational interpersonal strategy which can help writers express their claims with caution, modesty and humility and also negotiate their claims diplomatically in a research community (Hyland, 1994).

Furthermore, maintaining coherence is one of the most essential factors which should be considered in the academic writing; for this purpose, all types of meta discourse markers should work together. In this study, high use of transitions (e.g. additives, contrastives, and consequentials) indicated that the writers of medical and TESOL articles used transitions frequently in order to represent the internal connections in the discourse, which is a crucial feature of academic argument. Besides, transitions are used for guiding the reader through the maze of propositions (Thompson, 2001). In other words, transitions can be used for eliminating obscurity of expressions, ambiguity and incomprehensible communication.

The results of this study also showed that there was a significant difference between TESOL and Medical RAs in the use of evidentials, in the use of code glosses, in the use of attitude markers, and in the use of self-mentions. In other words, evidentials were used more frequently in TESOL RAs than in medical RAs. It showed that the writers of TESOL RAs used more support and justification for their claims. Besides, code glosses occurred more frequently in TESOL RAs than in medical RAs. It indicated that the writers of TESOL RAs provided more exemplification, restatement, and clarification in order to help readers understand and interpret the text. However, attitude markers were found to be employed more frequently in medical RAs than in TESOL RAs. It revealed that the writers of medical RAs had greater tendency to use attitude markers to evaluate propositional information, to express their attitudes towards the propositional content and to help their readers understand their points of view. Additionally, the authors of medical RAs utilized a higher number of self-mentions than the authors of TESOL RAs. It showed that the authors of medical RAs explicitly gave reference to themselves more than the authors of TESOL RAs.

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