### Metadiscourse Markers in Scientific Journal Articles

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| **ARTICLE INFO** |  | **ABSTRACT** |
| ***Keywords:*** *interactive metadiscourse marker; interactional metadiscourse marker; scientific journal article; academic writing*  ***How to cite:***  (2019). Metadiscourse Markers in Scientific Journal Articles*. Langkawi: Journal of The Association for Arabic and English, 5(2), 175-184.*  ***DOI:*** |  | *This paper aimed to investigate the use of metadiscourse markers in scientific journal articles. Data of this qualitative research consisted of metadiscourse markers collected from eight journal articles of a special edition published by LLT Journal: A Journal on Language and Language Teaching. The collected metadiscourse markers used in the journal articles were analyzed using discourse analysis based on ten metadiscourse marker categories. Results showed that the analysed journal articles contained 708 metadiscourse markers, with more interactive metadiscourse markers, reaching 529 occurrences, than interactional metadiscourse markers, occurring 179 times. Transitions, such as “but” and “thus”, with 249 occurrences, were the most frequently-used metadiscourse marker and boosters, such as “in fact” and “definitely”, with 24 occurrences, were the least productive marker. It is expected that English language learners and instructors can benefit from the results of this study, particularly in relation to the use of metadiscourse markers in academic writing.* |
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# **1. Introduction**

Language is the main key to effective communication and interaction. People should be able to use proper language in order to communicate effectively. Language is used for communication in the form of speaking, writing, and reading. In writing, writers should choose diction wisely to deliver their intensions. They should be able to produce any kinds of texts which are easy to be understood by readers. However, to produce such good texts which are “reader-friendly” remains challenging for writers. Sometimes, they can write completely but the writing is difficult to understand. Readers tend to have difficulty to “get into the text.” Writer-reader interaction in a text is “an integral part of achieving communicative purposes in every discourse community” (Akbarpour & Sadeghoghli, 2015, p. 270). In this context, the role of metadiscourse is crucial. Metadiscourse refers to the concept that writers must learn to “organize texts, engage readers and signal attitudes to the material and the audience” (Hyland, 2005, p. ix). By using metadiscourse, it is expected that writers produce more “reader-friendly” texts so that readers can easily follow their writing.

Mina and Biria (2017) mention that the elements of metadiscourse are rhetorical tools which make a text reader-friendly and enable the writer to get attention of the audience. “Metadiscourse has been an object of research since the 1990s and due to its importance, a considerable amount of literature has been published on the role of metadiscourse in academic writing and research articles” (e.g. Crismore & Farnsworth, 1990; Crismore, Markkanen, & Steffensen, 1993; Abdi, 2002; Dafouz, 2003; Hyland & Tse, 2004; Blagojevic, 2004; Simin & Tavangar, 2009; Biria & Noorian, 2010; Sultan, 2011; Kim & Lim, 2013; Khedri, Chan, & Ebrahimi, 2013, Aull & Lancaster, 2014; Lee & Deakin, 2016). Metadiscourse has already been established as “one of the essential elements of pragmatically effective academic written communication” (Yuksel & Kavanoz, 2018, p. 105).

The terms *discourse* and *discourse analysis* have different meanings to scholars in different fields. For linguists, mostly they define “discourse” as “anything beyond the sentence” (Tannen, Hamilton, & Schiffrin, 2015, p. 1). Discourse analysis examines the use of language that is influenced by relationships between participants and also its effects upon social identities and relations (Paltridge, 2012). In other words, it considers the relationship between language and its contexts. From the discourse analysis, it can be seen “how people achieve certain communicative goals through the use of language, perform certain communicative acts, participate in certain communicative events and present themselves to others” (Paltridge, 2012, p. 7). Gee and Handford (2012, p. 1) define discourse analysis as “the study of language above the level of a sentence, of the ways sentences combine to create meaning, coherence, and accomplish purposes”. The term *discourse analysis* is first introduced by Harris (1952), who defines discourse analysis as a way of analyzing connected speech and writing (cited in Paltridge, 2012).

Jorgensen and Phillips (2002) mention two purposes of discourse analysis. The first one is to figure out the process of finding the way in fixing the meaning of signs and the way in making the meaning becomes conventionalized. The second one is to remove the ambiguity in the texts. From these two aims, it can be inferred that discourse is a tool to make both spoken and written communication meaningful. Meanwhile, Fairclough (1995, p. 135) proposes three concepts of discourse, namely “language use as social practice; the kind of language used within a specific field; and a way of speaking which give meanings to experience from a particular perspective”. According to Gee and Handford (2012), discourse analysis can deal with one or both of two tasks which are related to utterance-type (general) meaning and situated meaning. Utterance-type (general) meaning involves the study of correlations between form and function in language at the level of utterance-type meanings (general meanings). Meanwhile, situated meaning involves discovering the situation-specific or situated meanings of forms used in specific contexts of use.

Metadiscourse refers to the concept of how writers “organize text, engage readers and signal attitudes to the material and the audience” (Hyland, 2005, p. ix). Meanwhile, Crismore, Markkanen, and Steffensen (1993) state that metadiscourse is: “Linguistic material in texts, written or spoken, which does not add anything to the propositional content but that is intended to help the listener or reader organize, interpret and evaluate the information given” (p. 40).

If metadiscourse markers are removed, the texts will be less personal, less interesting, and less easy to follow (Hyland, 2005) because metadiscourse is a linguistic device to organize the texts, engage readers, and show writers’ attitude to their material and their audience (Hyland, 2005). There are two categories of metadiscourse markers, namely interactive and interactional (Hyland, 2005). Based on the two main categories, there exist the following 10 subcategories:

**Table 1.** Metadiscourse Markers (Hyland, 2005)

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| --- | --- | --- |
| **Category** | **Function** | **Examples** |
| **Interactive** | **Help to guide the reader through the text** | **Resource** |
| 1. Transitions | Express relations between main clauses | *In addition; but; thus; and* |
| 2. Frame markers | Refer to discourse acts, sequences or slogans | *Finally; to conclude; my purpose is* |
| 3. Endophoric markers | Refer to information in other parts of the text | *Noted above; see Fig; in section 2* |
| 4. Evidentials | Refer to information from other texts | *According to X; Z states* |
| 5. Code glosses | Elaborate propositional meanings | *Namely; e.g.; such as; in other words* |
|  | | |
| **Interactional** | **Involve the reader in the text** | **Resource** |
| 6. Hedges | Withhold commitment and open dialogue | *Might; perhaps; possible; about* |
| 7. Boosters | Emphasize certainty or close dialogue | *In fact; definitely; it is clear that* |
| 8. Attitude markers | Express writer’s attitude to proposition | *Unfortunately; I agree; surprisingly* |
| 9. Self-mentions | Explicit reference to author (s) | *I; we; my; me; our* |
| 10. Engagement markers | Explicitly build relationship with reader | *Consider; note; you can see that* |

Source: Attarn (2014, p. 67)

There have a number of studies conducted in relation to metadiscourse markers. Attarn (2014) analyzed interactive and interactional metadiscursive features in ESP articles written by Iranian and English native speakers. The results showed that both Iranian and English writers use interactive and interactional features. However, they used interactive metadiscourse more than the interactional. A study by Lee and Subtirelu (2015) compared the use of metadiscourse markers by teachers in EAP lessons and university lectures. It was a corpus study which consisted of 18 EAP lessons and 18 university lectures. The results showed that the use of metadiscourse markers in classroom was related to the context and content of teaching and learning. Moreover, metadicourse played a crucial role in EAP lessons rather than university lectures.

The other study conducted by Huh and Lee (2016) explored how metadiscourse features used by 34 undergraduate students to make their persuasive texts. It was found that the students employed some of the metadiscourse resources but were limited in rhetorical sophistication. On the other hand, Akram (2017) investigated the differences between Persian and English online headline in using metadiscourse markers. It was revealed that Persian fields made more use of the metadiscourse markers than English fields. Meanwhile, a corpus-based linguistic study by Yuksel and Kavanoz (2018) explored the frequencies and usage of metadiscourse markers in Turkish learners of English essays and investigates the differences from native speaker norms. They found that both novice and expert writers used interpersonal metadiscourse markers more frequently rather than textual metadiscourse markers.

Lee and Casal (2014) conducted a study to examine the metadiscourse markers in the results and discussion sections. However, in their study, Lee and Casal analyzed metadiscourse markers in Master’s theses. In the present study, the researchers would analyze metadiscourse markers identified in the results and discussion sections of journal articles. Lee and Casal (2014) claimed that in the results and discussion section, writer-reader interaction became extensive. In this section, writers have to convince readers of claims from writers’ point of view by comparing their findings with previous studies and providing sufficient explanations (Thompson, 2013). Metadiscourse analysis can facilitate “the development of a well-structured message that engages readers and exhibits the writer’s stance toward propositions and the audience of the text” (Alyousef, 2015, p. 1).

Based on the significant role of metadiscourse in academic writing, particularly in scientific journals, as presented above, this paper aims to investigate the use of metadiscourse markers in scientific journal articles. The articles were analyzed using the metadiscourse marker theory proposed by Hyland (2005). The research question was formulated as follows: What are the metadiscourse marker categories used in scientific journal articles? The focus was on the results and discussion sections of the scientific articles.

# **2. Method**

This study was qualitative research since it dealt mainly with descriptions, not statistical numbers. The frequencies of occurrences were used to support the data analysis. The researchers used discourse analysis to analyze metadiscourse markers identified in the scientific journal articles. Paltridge (2012, p. 1) mentions that discourse analysis is “an approach to the analysis of language that looks at patterns of language across texts as well as the social and cultural contexts in which the texts occur”. In this study, the researchers analyzed the results and discussion sections. In addition, the data source of this study was eight research articles collected from *LLT Journal: A Journal on Language and Language Teaching* (*LLT Journal*, henceforth) published in June 2018 as a special edition (Andang & Bram, 2018; Febriyanti, Inderawati, & Fiftinova, 2018; Hadiyanti & Widya, 2018; Indraswari & Kuswandono, 2018; Kurniasari & Mbato, 2018; Pratiwi & Triprihatmini, 2018; Tanjung, 2018; & Wulandari & Ena, 2018). Originally, ten articles were published in this edition. The researchers excluded two articles (the first and the tenth ones) in the special issue because they had no results and discussion sections in the two articles (they were non-research papers).

In collecting the data, the researchers read the eight articles briefly first. Second, the researchers read the articles one by one while collecting the metadiscourse markers focusing on interactive categories, namely transitions, frame markers, endophoric markers, evidentials, and code glosses. After completing the interactive category, the researchers then moved to the interactional category, which consists of hedges, boosters, attitude markers, self-mentions, and engagement markers. The researchers rechecked the collected data several times to make sure that all of the metadiscouse markers had been documented. Third, the researchers made tables consisting of 10 metadiscourse marker categories. Fourth, the researchers calculated the frequencies of each metadiscourse marker category.

Next, the researchers took some steps in analyzing the data. The first step was preparing the data, namely eight journal articles selected from *LLT Journal*. The data were metadiscourse markers collected from the articles. The next step was coding all of the data. The researchers categorized the metadiscourse markers found in the articles based on the ten metadiscourse marker categories (Hyland, 2005). Then, the researchers provided tables consisting of metadiscourse marker categories and the frequency of occurrence of each category. Lastly, the researcherd discussed the findings by providing the examples of metadiscourse markers found and gave interpretations.

# **3. Findings and Discussion**

From the eight articles in *LLT Journal*, all categories of metadiscourse markers were identified. The two main categories were interactive (with subcategories, namely transitions, frame markers, endophoric markers, evidentials, and code glosses) and interactional (with the following subcategories: hedges, boosters, attitude markers, self-mentions, and engagement markers). The findings were presented in Table 2.

**Table 2.** The Use of Metadiscourse Markers in Journal Articles

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| **Interactive** | |
| **Category** | **Frequency** |
| Transitions | 249 |
| Frame markers | 43 |
| Endophoric markers | 97 |
| Evidentials | 99 |
| Code glosses | 42 |
| **Total** | **529** |
|  | |
| **Interactional** | |
| **Category** | **Frequency** |
| Hedges | 57 |
| Boosters | 16 |
| Attitude markers | 44 |
| Self-mentions | 27 |
| Engagement markers | 35 |
| **Total** | **179** |

From Table 2, it could be seen that the article authors of *LLT Journal*, who were Indonesians, used interactive more than interactional metadiscourse markers. The findings of some other studies in metadiscourse also found more interactive than interactional metadiscourse (Attarn, 2014; Mu, Zhang, Ehrich, & Hong, 2015; Wang & Zhang, 2016). In contrast, some other studies found that their writers tended to use interactional metadiscourse rather than the interactive (Aull & Lancaster, 2014; Huh & Lee, 2016; Ho & Li, 2018). There was a big difference between the number of interactive metadiscourse markers, namely 529 resources, and interactional metadiscourse, namely only 179 resources. In detail, transitions were the largest number of markers, namely 249 resources. The second largest number of marker was evidentials with 99 resources in total. The third largest metadiscourse marker was endophoric markers, with 97 resources. The fourth largest marker was hedges, with 57 resources in total. The fifth largest which had 44 resources was attitude markers. Frame marker was the sixth largest since it had 43 resources. The seventh largest number of marker was code glosses, with 42 resources in total. Engagement marker had 35 resources and it became the eighth largest. The last two metadiscourse markers were self-mentions with 27 resources, followed by boosters with 16 resources.

# **3.1. Interactive markers**

Based on the analysis, the writers in *LLT Journal* used more interactive rather than interactional markers in their articles. Hyland and Tse (2004, p. 168) explain that “interactive resources are concerned with ways of organizing discourse, rather than experience, 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”. By using interactive metadiscourse, the writers tried to organize their articles so that the readers could easily follow the ideas. It made the articles more understandable. The findings showed that all of interactive metadiscourse categories were used in the eight articles in *LLT Journal*. The categories were transitions, frame markers, endophoric markers, evidentials, and code glosses. The following sections were the further explanations of the findings of this study.

**a. Transitions**

Transitions are when the writers show textual unity by using logical links between ideas (Huh & Lee, 2016). Hyland (2005) points out that transitions markers consist of addition, comparison, and consequence. The addition, such as *moreover, in addition, and* are used for adding arguments or activities (Hyland, 2005). The comparison including *in contrast*, *on the other hand*, *meanwhile* are for comparing and contrasting events, things, qualities, arguments, and evidence (Hyland, 2005). The consequence, for instance, *as a result*, *therefore*, *consequently* are used for explaining why and how something happens, and drawing conclusions or countering arguments (Hyland, 2005). Similar to several studies (Li & Wharton, 2012; Mirshamsi & Allami, 2013; Lee & Casal, 2014; Alyousef, 2015; Rezaie & Lashkarian, 2015; Huh & Lee, 2016) transitions were the most frequent occurrence in the articles, specifically the interactive metadiscourse markers. Here are the examples of transition markers used by the paper writers in the articles.

1. “This section discusses the language attitudes based on the university origin of the participants. The participants’ origins were from five universities (two public, three private) in Yogyakarta. **Furthermore**, based on the 23 items about language attitude, there were five (5) statements which gain influential high ratings”.
2. There is no trend of mono strategy (direct strategies or indirect strategies repetitively) as they have already been learning English for multiple years. However, their different kinds of strategies mainly for some strategies show that they utilize them in purpose. **Additionally**, the reasons that underline students’ preference can be researched for further confirmation.

In examples 1 and 2, the paper writers used the transitions *furthermore* and *additionally* to express additional ideas related to the previous ones. Example 1 showed that the writer talked about the main findings of the study after mentioning the general idea of the section. Meanwhile, in example 2, the writer added another activity, namely researching the reasons for students’ preference for further confirmation.

1. There were 12 students (30%) who were in failed category, 23 students (57.5%) who were in low category, and four students (10%) who were in enough category, one student (2.5%) were in good category, and no student (0%) was in very good category. The lowest score was 25, the highest score was 75, and the mean score was 47. **In contrast** with the experimental group students, the students in the control group were not exposed to the treatment.
2. Students considered PPtP less boring and helped them understand the lessons. It aided clarify and emphasize the materials. With bullet points and visuals, it offered a simpler way to learn complex materials as it was easier to read and grab comprehensively. **On the other hand**, some felt bored and sleepy.

Examples 3 and 4 showed that the writers made use of transitions, particularly the comparison, namely *in contrast* and *on the other hand*. These transitions were used for contrasting the particular things of the studies. The writer of the example 3 mentioned that the control group students were different from the experimental group students because they did not receive the treatment. Example 4 showed the different perception of the use of bullet points and visuals. Some students considered that it was helpful to understand complex materials whereas other students got bored and sleepy.

1. The English teachers tend to face their problems in TPD in two factors. The first challenge is inadequate time of following TPD. The participants still get problems how to match their schedules with TPD. The second challenge is TPD materials. The English teacher tries to find what kind of suitable materials and topics for TPD. **Hence**, TPD can be followed up to gain the best result.
2. The students were accommodated to learn topics of public speaking through video and try to analyze the video given to make them understand the lesson more. It referred to McKinnon’ (2000) and McGovern’ (1983) theories on video that video was one of teaching and learning aids which offered interesting and real situation. Both students and lecturer were also communicative and cooperative in Public Speaking class. **Thus**, the goal of Public Speaking class itself was achieved.

Both examples 5 and 6 used transitions to express the consequences. The writers used *hence* and *thus* to draw conclusions based on what previous sentences stated. In example 5, the writer concluded that because the English teacher found the suitable materials and topics for TPD, it could be followed up and the best result obtained. Example 6 showed that the goal of Public Speaking class could be achieved because of students and lecturers’ effort in creating communicative and cooperative classroom activities.

# **b. Frame markers**

Cao and Hu (2014, p. 19) state that frame markers are “used primarily to organize texts for readers” and Uccelli, Dobbs, and Scott (2013, p. 45) consider frame markers as “signal the sequence of claims or contrastive positions in the argument”. Hyland (2005) elaborates some functions of a frame marker along with the examples. First, it sequences parts of the text or orders an argument (e.g. *first, second, then, next*). Second, it can label text stages explicitly (e.g. *in sum, to summarize, in brief*). Third, it declares discourse goals (e.g. *my purpose is, I seek to, o end with*). Fourth, it indicates topic shifts (e.g. *right, well, let us return to*). In general, frame markers are used in the articles to show the shifting topic and keep the flow smoothly. From the analysis, the researchers only found 43 frame markers. It could be assumed that the writers rarely utilized frame markers in their articles. The following were the examples of frame markers used by the writers.

1. The English teachers tend to face their problems in TPD in two factors. **The first** challenge is inadequate time of following TPD. The participants still get problems how to match their schedules with TPD. **The second** challenge is TPD materials. The English teacher tries to find what kind of suitable materials and topics for TPD.
2. “As this study **aims to** investigate the language attitudes toward English and Indonesian, it intended to find out the general perspectives about language attitudes towards English and Indonesian and relationship between the learners’ language attitudes towards university origin, educational background and profession variables”.
3. **In short**, lecturers must be creative as it implicates on their students’ motivation, self-esteem, and learning success (Richards, 2013). The more support lecturers have to help students apply their strategies in learning, the more successful Indonesian university students in achieving their English proficiency.

As could be seen in the examples above, the writers used frame markers which had different functions specifically. In example 7, the writer elaborated the argument related to main idea of his/her writing. The writer mentioned two challenges faced by English teachers in TPD orderly. *The first* and *the second* frame markers were used in example 7. The writer of example 8 used a frame marker, namely *aim to* to state the discourse goal. It was mentioned that the aim of the study was to investigate the language attitudes toward English and Indonesian. Meanwhile, in example 9, the writer used *in short* to explicitly label the text stages. In this example, the writer wanted to give a stage to simplify the previous sentences mentioned.

1. **Endophoric markers**

Endophoric markers are used for expressing the relation of certain information mentioned in the different parts of the articles (Huh & Lee, 2016). Hyland (2005) notes that “these make additional ideational material salient and therefore available to the reader in aiding the recovery of the writer’s meanings, often facilitating comprehension and supporting arguments by referring to earlier material or anticipating something yet to come” (p. 51). In other words, the writers used endophoric markers to provide clearer information referring to the other sections of their writing. Based on the data analysis, there was fairly a high frequency of occurrence of endophoric markers. The writers used 97 endophoric markers in their articles. The examples of endophoric markers used by the writers were presented as follows.

1. From the **diagram above**, it can be seen that content and performance standards and ICT skills for teaching are wanted by most teachers in joining TPD. It is because they usually get the educational policies from the government in TPD program. They just get how to make a lesson plan and it is repeated too frequently in TPD program.
2. As shown in **Table 1**, based on the result of pre-test most of the students were categorized in low and failed level. There were 18 students (45%) in low level and 18 students (45%) were in failed level.
3. Apart from the above motivation account of the teachers, in this study, the researchers also found some challenges encountered by English teachers in joining TPD in Indonesia which is discussed in **the following section**.

From the three examples above, the writers used endophoric markers to mention the specific sections of the articles. In example 10, the writer used an endophoric marker, namely *diagram above* referring to a diagram shown previously. The diagram showed that most of teachers wanted content and performance standards and ICT skills for teaching. Example 11 showed the use of an endophoric marker, namely *Table 1*. The writer used this marker to inform the readers that *Table 1* contained the results of the pre-test. On the other hand, the writer used *the following section*. By using this marker, the writer indicated the next section would discuss the challenges faced by English teachers.

1. **Evidentials**

According to Huh and Lee (2016), writers utilize evidentials when they mention particular information taken from other texts or sources. Commonly, the writers use evidentials to support their proposition (Hyland, 2005). It means that evidentials can strengthen writers’ opinion in their articles. In this study, there were 99 evidentials found in the articles. The examples were provided as follows.

1. This finding is in line with the previous research findings of **Oh (1992)**, **Sheorey (1999)**, and **Salahshour, et al. (2013)** at which students make use of metacognitive strategy to have fixed preparation, control, and evaluation for their own stage of learning language **(Graham, 1997; Zare, 2012).**
2. On the contrary, it proves that **O’Malley, et al. (1985)** report about Asian students’ learning strategy is memory strategy cannot be fully accepted because Indonesian students, including as part of Asian context, utilize metacognitive strategy more frequently.
3. Then, the lecturer provided the video and other facilities to support the use of video to Public Speaking students. The students were accommodated to learn topics of public speaking through video and try to analyze the video given to make them understand the lesson more. It referred to **McKinnon’ (2000)** and **McGovern’ (1983)** theories on video that video was one of teaching and learning aids which offered interesting and real situation.

From the provided examples, it could be seen that the writers used evidentials in their articles to support their arguments (in different functions). In example 13, the writer used five different sources to support his/her proposition. The writer stated that the result of his/her study was the same as other studies mentioned in the article. On the other hand, the writer of example 14 mentioned the opponent of his/her study. It seemed that his/her study had different results from previous studies. Example 15 showed that the writer provided a particular theory to strengthen his/her arguments. The writer mentioned his/her claim followed by a theory from experts.

1. **Code glosses**

In articles, writers make use of code glosses for providing additional information by explaining, rephrasing, or illustrating (Gholami, Tajalli, & Shokrpour, 2014). By using code glosses, writers elaborate difficult concepts and terms as well as giving examples to illustrate their idea (Huh & Lee, 2016). Thus, clarity can be achieved by using code glosses (Cao & Hu, 2014). The examples of code glosses in the articles were presented as follows.

1. Figure 3 shows that metacognitive is the most frequent strategy used by the students as well. Frequently, the 20-21 years old students also make use of the other strategies, **such as** social, compensation, cognitive, affective, and memory.
2. As shown earlier in findings, it can be stated that students use a combination of indirect and direct learning strategies, **namely** metacognitive, social, and compensation strategies. Thus, it conforms Oxford (1990) reports that indirect and direct strategies are interrelated each other since students generally combine them in the process of learning language.
3. The word *fuck* **refers to** sexual intercourse activities while the word *bitch,* which **means** a female dog, sounds harassing to women when it is spoken by both a male and female to other females, especially in distorted media, such as Facebook (Herring & Kapidzic, 2015: p. 1, Guvendir (2015, p. 2).

There were four different code glosses used by the writers. In example 16, the writer used *such as*. This code gloss was used for mentioning other strategies used by 20-21 years old students in learning language. Meanwhile, the code gloss used in example 17 was *namely*. It was used for providing further information related to the combination of indirect and direct learning strategies mentioned by the writer earlier. Differently, the writer of example 18 used two code glosses, namely *refers to* and *means*. These two code glosses had the same function in the sentences, that is, to clarify a term in the sentence.

**3.2 Interactional markers**

Interactional markers “involve readers in the argument by alerting them to the author’s perspective towards both propositional information and readers themselves” (Hyland & Tse, 2004, p. 168). Based on the use of interactional markers, it could be seen the interaction between writers and readers. Interactional markers are the engagement of writers and they assist writers to build relationship with readers (Wang & Zang, 2016). In this study, the use of interactional markers was less than interactive markers. In total, there were only 179 interactional markers which came from five categories. Those categories were hedges, boosters, attitude markers, self-mentions, and engagement markers. Further elaboration was presented in the following sections.

1. **Hedges**

Hedges are used by writers when they do not want to show their full commitment to ideas (Akbarpour & Sadeghoghli, 2015). Sometimes readers might have different opinions related to certain issues. Hence, writers use hedges for increasing the reliability and objectivity of their study (Wang & Zang, 2016). Based on the analysis, there were 57 hedges found in the articles. The frequency of occurrence of hedges was the highest among the other interactional marker categories. It is in line with Rezaie and Lashkarian’s (2015) study that hedges is the most frequently used from the interactional marker category. The following were the examples of hedges used by the writers.

1. During the debate activity preparations, the teacher helped students to develop various strategies to deal with different communication situations that they **may** encounter outside of the classroom.
2. In composing phase of the process approach, the students had to describe the person, the place, and the thing they saw in front of their eyes, so they could not cheat by a look at the internet. It means this approach **could** help the teacher prevent the fraud because they focused on the students' writing process.
3. Besides teaching schedules, family **seems to** be the second challenge for the participants to do TPD program. Based on the data, there are three topics about family as a burden of TPD appears. The data said that TPD decreases teachers’ family time.

The writers made use of hedges to facilitate other possible perceptions from readers. In example 19, the writer used *may* in the sentence. It showed the writer’s uncertainty that students would face different communication situation or not. Example 20 showed the writer’s argument related to the process approach. The writer used *could* to claim his/her opinion that the process approach helped teachers to prevent fraud. Meanwhile, the writer of example 21 used *seems* to state that family was the second challenge for the participants. From the sentence, it could be seen that the writer had an open statement whether family was one of the challenges.

1. **Boosters**

Khedri and Kritsis (2018) point out that boosters are used for avoiding different opinions or possible objections. Writers utilize boosters to show their certainty instead of doubt so that there will be no conflicting arguments (Gholami, Tajalli, & Shokrpour, 2014). The use of boosters showed the writers’ authorization to make claims in a firm way. This study identified 16 boosters used by the writers in the articles. From the five interactional categories, boosters had the lowest frequency of occurrence in the articles. The examples of boosters used by the writers were provided as follows.

1. “These results **clearly** supported our hypothesis that there were no significant differences on the participants’ perspectives in language attitudes towards English and Indonesian based on university origins, university majors and profession variables”.
2. Another consideration is that Indonesian class size is large so if the students are taught well using the CALLA model then the students do not have to be directed all the time. **In fact**, they can do evaluation and self-reflection simultaneously.
3. However, the researchers not only studied the students’ speaking skills quality from the questionnaire result, but also from observations. From this part, the researchers **found** that most of the students, seven out of eight students, rated their speaking skills as good.

As could be seen from the examples in 22-24, the writers used three different kinds of boosters for expressing their certainty. The booster in example 22 was *clearly*. The writer firmly stated that the result of his/her research supported the hypothesis. In example 23, the booster used by the writer was *in fact*. Based on the sentence, the writer wanted to express his/her strong argument by mentioning a fact. The fact was that students could do both evaluation and self-reflection simultaneously. Example 24 showed the writer’s certainty by using *found* as the booster. The word *found* strengthened writer’s argument because it was based on the reality discovered through the research.

1. **Attitude markers**

Attitude markers are used by writers “to express their opinion to proposition” (Akbarpour & Sadeghoghli, 2015, p. 267). In particular, writers used attitude markers to communicate their personal feelings toward the ideas. Generally, attitude can be expressed in the forms of adjectives (e.g. appropriate), verbs (e.g. prefer), and adverbs (e.g. unfortunately) (Huh & Lee, 2016). In this study, there were 44 attitude markers found in the articles. The following presented the examples of attitude markers used by the writers.

1. The word *bloody* **surprisingly** has a high frequency of occurrence (10,742 times) for the word *bloody* is popularly used by the British rather than the American. In Chris Kirk’s another survey results (the profanities used according to the countries), the word *bloody* was in the least occurrence in the United States and Canada (placed in the sixteenth and fifteenth), while in the United Kingdom, the word *bloody* placed in the third most frequent profanity.
2. It is **remarkable** to find that no one disagreed, meaning that most participants agreed, to the ideas that PowerPoint presentations assisted the lecturers of Structure classes to be organized in delivering the materials, and in emphasizing important points.
3. The item number twelve gains 3.98 or as the mostly chosen strategy. Students **prefer to** practice their English whether it involves the practice during the teaching learning process or any kinds of activities they do outside the classroom.

From the examples, there were three different forms of attitude markers used by the writers. Example 25 showed an adverbial attitude marker, namely *surprisingly*. The writer expressed his/her feeling because of the shocking result of the study. It was found that the word bloody had a high frequency of occurrence. On the other hand, there was an adjectival attitude marker in example 26 used by the writer. The attitude marker was *remarkable*. It was used for expressing feeling since an unusual result was found in the study. Meanwhile, example 27 mentioned a verb *prefer to* as an attitude marker. The writer expressed his/her feeling by drawing a conclusion that students had willingness to practice their English both inside and outside classroom.

1. **Self-mentions**

Alyousef (2015) states that self-mentions express writers’ presence by using first-person pronouns as well as possessives. The first-person pronouns, such as *I* and *we*, whereas possessives including *my* and *our*. It is likely that writers also mention his/herself as the writer, the author, or the researcher. A writer uses self-mentions to provide information related to his/her position and character (Gholami, Tajalli, & Shokrpour, 2014). This study found out that the writers used 27 self-mentions in their articles. Further explanations based on the examples were presented as follows.

1. “Apart from the above motivation account of the teachers, in this study, **the researchers** also found some challenges encountered by English teachers in joining TPD in Indonesia which is discussed in the following section”.
2. “After checking the normality and homogeneity of the data, the t-test can be applied. In this study, **the writer** used paired sample t-test and independent sample t-test. The result of paired sample t-test can be seen in Table 5”.

Based on the analysis, there were only two kinds of self-mentions used by the writers. The 27 self-mentions consisted of *the researcher* and *the writer* only. These two self-mentions had the same function as expressing the writers’ position related to their study. In example 28, the writer stated that he/she also found several challenges faced by the English teachers. Note that the writer of example 29 mentioned that he/she used a paired sample t-test and independent sample t-test in the study.

1. **Engagement markers**

According to Khedri and Kritsis (2018), engagement markers assist writers to “bring readers into discourse, inviting them into argumentations” (p. 51). Commonly, engagement markers are in the forms of “personal pronouns, directives, asides, and interrogative structures” (Khedri & Kritsis, 2018, p. 51). By using engagement markers, the writers wanted to include readers in the ideas of their articles. This study found 35 engagement markers in the articles. The following were the examples of engagement markers in the articles along with explanations.

1. As part of Asian and world community, Indonesian university students **should** prepare, manage or control and evaluate their learning process. Thus, learning strategies is one of crucial things to recognize, use and improve in order to reach high achievement theoretically and practically (in all four language skills).
2. According to the findings above, it could be **assumed** that the improvement was caused by the strategy applied. Process approach through environmental observation facilitates the students generating the ideas and focusing on language errors to improve their grammatical accuracy and writing fluency.
3. It is as well interesting **to note** that less than half of the students got involved in classroom discussion when PPtP was used. The other students might think that there was no difference whether it was used or not.

From the examples provided, it could be seen that the writers used different kinds of engagement markers. In example 30, the writer used *should*. This engagement marker aimed to invite readers to have the same opinion that Indonesian university students needed to prepare, manage or control, and evaluate their learning process. In the next example, example 31, the writer used *assumed*. By using this engagement marker, the writer intended to make readers follow his/her opinion related to the findings of the study. Another engagement marker, in example 32, used by the writer was *to note*. In the sentence, the writer wanted to ask readers to pay attention to the important findings of his/her study.

# **4. Conclusion**

This study investigated the use of metadiscourse markers in scientific journal articles published in *LLT Journal: A Journal on Language and Language Teaching*. The results showed that the eight analyzed articles contained transitions, frame markers, endophoric markers, evidentials, code glosses, hedges, boosters, attitude markers, self-mentions, and engagement markers. It means that the article writers used both interactive and interactional metadiscourse markers. In particular, the writers tended to use interactive metadiscourse markers. Based on the findings, the frequencies of occurrences of interactive metadiscourse markers were higher than interactional metadiscourse markers. The most productive matadiscourse marker, with 249 resources, was the transition. Whereas, the subcategory *booster* became the least productive metadiscourse marker since it had a frequency of 16 only in total. It is expected that readers can gain a better understanding related to the use of metadiscourse markers in writing. For those who engage in the educational field, it is expected that the results of this study can provide them with insights concerning English learning and teaching in general and regarding academic writing in particular. It is essential to make students aware of metadiscourse markers as well as their functions so that the students will be able to apply the markers in their academic writing appropriately.

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