078. Hedges and boosters in academic texts: a comparative study on English language teaching and physiotherapy research articles

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APA: Akman, E. & Karahan, P. (2023). Hedges and boosters in academic texts: a comparative study on English language teaching and physiotherapy research articles. *RumeliDE Dil ve Edebiyat Araştırmaları Dergisi*, (32), 1335-1349. DOI: 10.29000/rumelide.1252902

Abstract

The current corpus study intended to examine and compare the use of hedges and boosters in discussion sections of English Language Teaching and Physiotherapy research articles that were published between 2020 and 2022. This study also aimed to discover the frequency and types of hedges and boosters in two disciplines. 15 research articles from each disciple were analyzed through descriptive statistics. The chi-square test was also run to analyze the data to determine whether there is a statistically significant difference in terms of the use of hedges and boosters between the two disciplines. According to the results of the descriptive statistics, the number of hedges outnumbered the boosters in both disciplines. Furthermore, findings revealed that the differences in the use of hedges between the two disciplines were significant and meaningful. On the other hand, there were no significant differences regarding the use of boosters. Some similarities and variations were found in terms of the categories of hedges and boosters used in the discussion sections of research articles in the two disciplines.

Keywords: Academic writing, hedges, boosters, discourse analysis, research articles

Akademik metinlerde kaçınma ve güçlendirme ifadeleri: İngiliz dili eğitimi ve fizyoterapi araştırma makaleleri üzerine karşılaştırmalı çalışma

Öz

Bu derlem çalışması ile 2020 ve 2022 yılları arasında yayınlanan İngiliz Dili Eğitimi ve Fizyoterapi araştırma makalelerinin tartışma bölümlerinde kaçınma ve güçlendirme ifadelerinin kullanımının incelenmesi ve karşılaştırılması amaçlamıştır. Bu çalışma ile aynı zamanda, iki disiplinde kaçınma ve güçlendirme ifadelerinin kullanım sıklığının ve kullanılan ifadelerin türlerinin keşfedilmesi de hedeflenmiştir. Seçilen iki disiplinden ayrı ayrı 15 araştırma makalesi, tanımlayıcı istatistik yöntemleriyle analiz edilmiştir. Bunun yanında iki disiplin arasında kaçınma ve güçlendirme ifadelerinin kullanılması açısından istatistiksel olarak anlamlı bir fark olup olmadığını belirlemek için ki-kare testi uygulanmıştır. Bu çalışmanın sonuçlarına göre, kaçınma ifadelerinin kullanımının her iki disiplinde de güçlendirme ifadelerinin kullanımından daha fazla olduğu bulunmuştur. Ayrıca bulgular, iki disiplin arasındaki kaçınma ifadelerinin kullanımı açısından anlamlı farklar olduğunu ortaya koymuştur. Diğer yandan, güçlendirme ifadelerinin kullanımı açısından iki disiplin arasında anlamlı bir farklılık bulunmamıştır. Son olarak çalışmada iki farklı disiplinde incelenen araştırma

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makalelerinin tartışma bölümlerinde kullanılan kaçınma ve güçlendirme ifadelerinin türlerinde bazı benzerlikler ve farklılıklar bulunmuştur.

Anahtar kelimeler: Akademik yazma, kaçınma, güçlendirme, söylem çözümleme, araştırma makaleleri

1. Introduction

The terms “hedges” and “boosters” can be defined as communicative strategies that help to increase or decrease the persuasiveness of statements. The concept of the hedge was first introduced by Lakoff (1972), who conceptualized hedges as modifying words or phrases within a proposition to make the border fuzzier or less fuzzy. On the other hand, Lakoff (1975) claimed that hedges may be divided into two fundamental categories; (1) to demonstrate the absence of certainty, and (2) to reduce the strength of a statement to make it more agreeable. While hedging devices reduce the strength of a statement, boosting devices enhance or emphasize the strength of a statement by expressing conviction and asserting a proposition with confidence (Hyland, 1998).

The basic concept of hedges and boosters has been expanded to include approaches in which hedges and boosters are used as a communicative strategy, as well as approaches in which hedges are used to conceal the writer's epistemic attitude (Markkanen & Schröder, 1997). In addition, Markkanen and Schröder (1997) claimed that hedges could be used for textual manipulation by leaving the reader in the dark about the truth value of what is being stated and who is responsible for it. In contrast to hedges, boosters leave little opportunity for readers’ interpretations and are used to establish interpersonal solidarity with the reader (Hyland, 1998). According to Hyland (1998), hedging and boosting are essential for expressing scientific statements in a social context, and they are not only accuracy-oriented but also writer- and reader-oriented.

The terms hedges and boosters have a strong connection with modality, which refers to a speaker’s or writer’s attitude toward the truth-value or factual status of a proposition (Takimoto, 2015). Similar to what the term modality represents, Takimoto (2015) claims that hedges and boosters are also related to a subject’s personal attitudes toward the propositional content. Also, Palmer (2007) regarded epistemic and evidential modalities as a type of propositional modality that refers to the speaker's or writer's attitude toward the truth-value of the proposition. In this vein, hedges and boosters are closely related to epistemic modality, which is concerned with how speakers or writers communicate their doubts, certainties, and predictions. Just as epistemic modality, evidential modality is related with hedges and boosters since it can be referred to as “any linguistic expression of attitudes toward knowledge” (Chafe, 1989, p.271). For example, Wang and Jiang (2018), looked into how much explicit authorial presence projects hedges, boosters, and self-mentions as main expressions of epistemic positioning in the research writings of Chinese PhD students and expert writers across four science disciplines. They categorized the linguistic realization of hedges and boosters into three categories: (1) modal verbs, (2) epistemic adjectives, adverbs, and nouns, (3) lexical verbs. Findings of the study indicated that hedges, boosters, and self-mentions were used far more frequently by PhD science students than by journal article writers. Hyland (1998) examined 56 research papers in eight disciplines: mechanical engineering, electrical engineering, marketing, philosophy, sociology, applied linguistics, physics, and microbiology; including one paper from each of seven leading journals. According to the findings, hedges outnumbered boosters by over three to one. Furthermore, the disciplinary outcomes were found to be significantly different. Philosophy, marketing, applied linguistics, and sociology accounted for

more than 70% of all hedges, and they were more than twice as common as electrical engineering, mechanical engineering, and physics.

Finally, Sepehri, Hajijalili, and Namaziandost (2019) compared the use of hedges and boosters in medical sciences and engineering research articles. They analyzed 30 medical and 30 engineering research articles. Frequency, percentage, and the Chi-square test were run to analyze the data. Significant differences were found in the frequency of hedges and boosters used in medical and engineering research articles. Furthermore, epistemic modality verbs, quantifiers, and nouns were the most common hedges; while nouns, lexical verbs, modal verbs, and adjectives were the most common boosters.

To this date, hedges and boosters have become an important concept to be investigated in academic texts as they significantly affect how writers express themselves in their texts and how readers may interpret these academic texts. There are a few cross-disciplinary studies about the use of hedges and boosters in academic texts. So far, many cross-discipline studies on hedging and boosting focused on different disciplines. A limited number of studies on the use of hedges and boosters in academic texts have shown some variations in the use of hedges (Vatalla, 2001) and boosters (Sepehri, Hajijalili & Namaziandost, 2019). These studies have examined all sections of research articles. However, in many cases, according to Salager-Meyer (1994), discussion sections of research articles are the most heavily hedged sections compared to the other sections. To the researcher's knowledge, there are no studies focusing on comparing the English Language Teaching and Physiotherapy disciplines, which are two soft science fields, in terms of the use of hedges and boosters in specifically the discussion sections of research articles. In this regard, the current study examines hedges and boosters in discussion sections of the two different disciplines' (English Language Teaching and Physiotherapy) research articles.

This study aims to answer the following two research questions:

1. What are the similarities and differences between the discussion sections of English Language Teaching and Physiotherapy research articles in terms of hedges?
2. What are the similarities and differences between the discussion sections of English Language Teaching and Physiotherapy research articles in terms of boosters?

2. Method

2.1. Data analysis

The current study adopts a corpus-based approach and has used quantitative data collection methods to examine the use of hedges and boosters in the discussion sections of English Language Teaching (ELT) and Physiotherapy (PHYS) research articles, both of which are considered soft sciences. According to Klimova (2014), the corpus-linguistic approach can be used to describe language features and test hypotheses formulated in different linguistic frameworks. The study adopted content analysis to categorize and interpret emerging hedges and boosters. Holsti (1968) defines content analysis as any kind of technique to make inferences by systematic and objective identification of the specific features of messages. Using descriptive statistics for this study was the most convenient option as it allowed the researchers to examine a large amount of written data in a restricted time. Quantitative data methods were chosen since they can help increase the chances of generalizability and allow researchers to analyze abundant amounts of data.

2.2. Identification of hedges

The goal of this study was to see how frequently hedges and boosters were employed in English Language Teaching and Physiotherapy research articles, and if there were any differences between the two disciplines. This study also aimed to discover how frequently different categories of hedges and boosters were used in the two disciplines, based on the categorization of Wang and Jiang (2018) (Table 1).

Table 1. Classification of hedges and boosters

Classification	**Example**
Hedges	
modal verbs	could, might, would
epistemic adjectives, adverbs and nouns	perhaps, likely, interpretation
lexical verbs	see, assume, suggest
Boosters	
modal verbs	must, will
epistemic adjectives, adverbs and nouns	obvious, always, argument
lexical verbs	demonstrate, slow, find

Hyland's (1998) list of hedges and boosters was used to analyze the discussion sections of the research articles selected for the study. The list was analyzed to decide which words might fit in the right categories. After the analysis, two separate lists were created for words that might fit into the hedges or boosters category, which can be seen in Table 2 and Table 3. As some words on the original list may express certainty or doubt in different contexts (e.g., however), the researchers have examined all the research articles twice to ensure that items found in the texts were categorized correctly with respect to the context in which they occurred. This way, the researchers aimed to ensure intra-rater reliability in this study. Some sentences from the database in which the word "however" was used for both hedging and boosting functions are exemplified as follows:

> "This could, **however**, represent a possibly measurement bias of our results." (PHYS6)
>
> "**However**, this is the only methodology that allows deep analysis of perceptions, feelings, and other information relevant to understanding one's lived experience." (PHYS 9)

Table 2. List of hedges found in Hyland's (1998) study

about	deduce	(it is) known	possibly	reportedly	tendency
almost	doubt	likely	prediction	seems	theoretically
approximately	estimate	may	predominantly	seemingly	(we) think
argue	expect	maybe	presumably	(can be) seen	uncertain
around	formally	might	presume	seldom	unclear
assume	frequently	more or less	probability	(general) sense	unlikely
assumption	given that	(not) necessarily	probable	sometimes	unsure
my/our belief	guess	occasionally	probably	somewhat	usually
I believe	however	often	propose	speculate	virtually
certain extent	hypothesize	ostensibly	provided (that)	suggest	would

claim	hypothetically	partially	(open to) question	superficially	wouldn't
(to be) clear	ideally	partly	questionable	suppose	
conceivably	implication	perhaps	quite	surmise	
conjecture	imply	plausible	rare	suspect	
contention	infer	possibility	rarely	technically	
could	interpret	possible	relatively	tend	

Table 3. List of boosters found in Hyland's (1998) study

actually	conclusive	essentially	incontrovertible	normally	unambiguously
admittedly	confirm	establish	indeed	obvious	unarguably
always	consistent with	evidence	indicate	obviously	undeniably
apparent	convincing(ly)	evident	inevitable	patently	undoubtedly
apparently	couldn't	evidently	(we) know	precisely	unequivocal
appear	(of) course	the fact (that)	largely	prove	unmistakable
assuredly	decidedly	we find	mainly	rather	unquestionably
basically	definitely	general	manifest (ly)	should	well-known
certain that	demonstrate	generally	most	show	will
certainly	determine	however	must	sure	won't
certainty	discern	impossible	(not) necessarily	surely	wrong (ly)
clearly	doubtless	improbable	never	true	
conclude	(is) essential	inconceivable	no / beyond doubt	typically	

2.3. Corpora

The database of this study consisted of research articles that were randomly chosen from reliable journals in each discipline. 15 English Language Teaching research articles were chosen from the *Language Assessment Quarterly* journal (See Appendix 1), and 15 Physiotherapy research articles were chosen from the *Physiotherapy Theory and Practice* journal (See Appendix 2). All of the examined research articles were published between 2020 and 2022 to get an updated view of recent trends in academic writing. The discussion sections of all research articles were examined for the occurrences of hedges and boosters. The number of words for all research articles is shown in Table 4 and Table 5 below.

Table 4. Details of the English Language Teaching (ELT) corpus

Research Article	Number of Words	Number of Words in the Discussion Sections
ELT1	10083	2099
ELT2	12308	459
ELT3	7099	1319
ELT4	8853	834
ELT5	7874	1148

ELT6	12436	805
ELT7	9211	1248
ELT8	8412	635
ELT9	8642	715
ELT10	6282	709
ELT11	8628	1807
ELT12	6363	1133
ELT13	10167	1525
ELT14	9239	1296
ELT15	9971	2099
Total	135568	17831

Table 5. Details of the Physiotherapy (PHYS) corpus

Research Article	Number of Words	Number of Words in the Discussion Sections
PHYS1	5192	1031
PHYS2	5550	1243
PHYS3	6731	1570
PHYS4	4877	1511
PHYS5	5168	870
PHYS6	5001	1371
PHYS7	4943	1248
PHYS8	5726	1177
PHYS9	5166	1470
PHYS10	4888	1647
PHYS11	3563	1129
PHYS12	3818	909
PHYS13	6368	883
PHYS14	3601	709
PHYS15	5686	941
Total	76278	17709

3. Findings

15 articles from each discipline were analyzed by counting the hedges and boosters in the discussion sections of the papers. Table 6 shows the frequency and percentage of the hedges and boosters used in the discussion sections of English Language Teaching (ELT) research articles. After analyzing the data, a total number of 349 hedges and 223 boosters were found in the ELT database. The article using the most frequent number of hedges was the ELT1 research article as it contained 54 hedges, while the article using the most frequent number of boosters was the ELT14 research article as it contained 27 boosters.

The percentages of hedges change between 0.69% and 2.68%, while the percentages of boosters change between 0.37% and 2.08%. In total, the ELT research articles contained 1.95% hedges and 1.25% boosters in their discussion sections.

Table 6. Frequency and percentage of hedges and boosters in the discussion sections of the ELT database

	Frequency of Hedges	Percentage of Hedges	Frequency of Boosters	Percentage of Boosters
ELT1	54	2.57%	21	1.00%
ELT2	10	2.17%	9	1.96%
ELT3	35	2.65%	8	0.60%
ELT4	21	2.51%	7	0.83%
ELT5	16	1.30%	20	1.74%
ELT6	6	0.74%	3	0.37%
ELT7	21	1.68%	21	1.68%
ELT8	16	2.51%	5	0.78%
ELT9	5	0.69%	12	1.67%
ELT10	9	1.26%	11	1.55%
ELT11	33	1.82%	18	0.99%
ELT12	11	0.97%	19	1.67%
ELT13	41	2.68%	19	1.24%
ELT14	21	1.62%	27	2.08%
ELT15	50	2.39%	23	1.09%
Total	349	1.95%	223	1.25%

Table 7 shows the frequency and percentage of the hedges and boosters used in the discussion sections of the Physiotherapy (PHYS) research articles. After analyzing the data, a total number of 293 hedges and 231 boosters were found in the PHYS database. The article that used hedges most frequently was the PHYS6 research article as it contained 43 hedges, while the article that used boosters most frequently was the PHYS3 research article as it contained 23 boosters. The percentages of hedges change between 0.34% and 3.13% , while the percentages of boosters change between 0.78% and 1.86%. In total, the PHYS research articles contained 1.65% hedges and 1.30% boosters in their discussion sections.

Table 7. Frequency and percentage of hedges and boosters in the discussion sections of the PHYS database

	Frequency of Hedges	Percentage of Hedges	Frequency of Boosters	Percentage of Boosters
PHYS1	14	1.35%	16	1.55%
PHYS 2	34	2.73%	14	1.12%
PHYS 3	38	2.42%	23	1.46%
PHYS 4	28	1.85%	20	1.32%
PHYS 5	3	0.34%	15	1.72%
PHYS 6	43	3.13%	20	1.45%

PHYS 7	31	2.48%	20	1.60%
PHYS 8	13	1.10%	22	1.86%
PHYS 9	9	0.61%	21	1.42%
PHYS 10	24	1.45%	13	0.78%
PHYS 11	19	1.68%	9	0.79%
PHYS 12	13	1.43%	13	1.43%
PHYS 13	8	0.90%	8	0.90%
PHYS 14	7	0.98%	6	0.84%
PHYS 15	9	0.95%	11	1.16%
Total	293	1.65%	231	1.30%

Based on the frequencies of hedges that are shown in Table 6 and Table 7 above, it can be seen that ELT articles contained 1.95% hedges in their discussion sections overall, while the PHYS articles contained 1.65% hedges. In Table 6, it can also be seen that ELT13 has the highest percentage of hedges with 2.68%, while ELT9 had the lowest percentage value with 0.69% among the ELT research articles. Moreover, it can be seen in Table 7 that PHYS6 has the highest percentage of hedges with 3.13%, while PHYS5 has the lowest percentage with 0.34% among the PHYS research articles. The gap in the percentage of the number of hedges used among research articles in the Physiotherapy database is more prominent. In terms of boosters, ELT articles contained 1.25% boosters in their discussion sections overall, while the physiotherapy articles contained 1.30%. In Table 6, it can be seen that ELT14 has the highest percentage of boosters with 2.08%, while ELT6 has the lowest percentage with 0.37% among the ELT articles. In Table 7, we can see that PHYS8 has the highest percentage of boosters with 1.86%, while PHYS10 has the lowest percentage with 0.78% among the Physiotherapy articles. This time, the gap in the percentage of the number of boosters used among the ELT Research articles is more prominent.

The Chi-square test was also run to see if the differences between the two disciplines were statistically significant in terms of their use of hedges and boosters. The difference between the frequencies of hedges in English Language Teaching and Physiotherapy research articles was found to be $p=0.02$ ($p<0.05$). This result indicates that the difference between the frequencies of hedges in the research articles of both disciplines was significant and meaningful. However, the difference between the frequencies of boosters in English Language Teaching and Physiotherapy research articles was found to be $p=0.70$ ($p>0.05$), which means that there were no significant differences between the two disciplines in terms of the frequency of boosters.

Table 8 shows the list of the most frequently used 15 hedges and 15 boosters in the ELT database. The most frequently used hedge was "*may"* as it occurred 44 times while the most frequently used booster was "*most"* as it occurred 27 times in the discussion sections of ELT research articles. Some examples of the most frequently used hedges from the ELT database are listed as follows:

> (1) "The social forces (or hidden expectations) **may** not always match curricular goals (or official expectations), creating a conflict between what is expected in the curriculum and what is actually practised." (ELT4)
>
> (2) "The test-takers and users' recognition and understanding of the authenticity of the computer-based reading test **could** also bring about a positive washback effect to the teaching and learning English." (ELT 15)

(3) "These **would** prevent teachers from putting their principles into practice in a consistent manner." (ELT 13)

(4) "Faster speech not only results in less time for L2 listeners to process the information, but it **might** also result in more phonologically modified and connected speech as well." (ELT 1)

Some examples of the most frequently used boosters from the ELT database are as follows:

(5) "Regarding feedback, the **most** widely used type of feedback pertained to marks and brief comments such as 'well done'." (ELT 13)

(6) "There is also **evidence** of the application of relevant rating scales and analytic criteria, though these are not fully explicated." (ELT 5)

(7) "Especially for increasingly common high-stakes, standardized tests, accommodations **should** be provided for this vulnerable group." (ELT 12)

(8) "Students would have more exposure to reading on computers, which **will** help them feel more comfortable reading on computers outside of the language classroom in the future as well." (ELT 15)

Table 8. List of the most frequent hedges and boosters found in the ELT database

Hedges	ELT database frequency	Boosters	ELT database frequency
may	44	most	27
could	39	evidence	23
would	38	should	18
might	36	will	15
however	25	however	14
suggest	22	rather	14
seems	17	indicate	12
likely	13	appear	8
possible	12	the fact (that)	7
frequently	9	actually	5
often	9	confirm	5
relatively	8	general	5
tend	8	generally	5
assumption	7	largely	5
virtually	6	clearly	4

In Table 9 below, the most frequently used 15 hedges and 15 boosters in the PHYS database are listed. The most frequently used hedge was "*may*" as it occurred 79 times while the most frequently used booster was "*show*" as it occurred 60 times in the discussion sections of PHYS research articles. Some instances of the most frequently used hedges from the PHYS database are listed as follows:

(9) "The divergence with current results **may** be explained by the fact that all previous studies were conducted on the older adults." (PHYS7)

(10) "This **could** partially explain the findings for the upper limb training that showed a higher progression of load for conventional training." (PHYS3)

(11) "This **suggests** that they were not independently associated with 6MWT when gait speed is also included in the model." (PHYS6)

(12) "Thus, anticipated improvements in the test following exercise training **might** be small." (PHYS 12)

Some examples containing the most frequently used boosters from the PHYS database are listed as follows:

(13) "Our results **showed** that depression is associated with a higher pain intensity and that kinesiophobia is associated with more severe disability." (PHYS8)

(14) "**However**, this is the only methodology that allows deep analysis of perceptions, feelings, and other information relevant to understanding one's lived experience." (PHYS9)

(15) "The present study **demonstrated** comparable gains on muscle force between three resistance training interventions." (PHYS3)

(16) "Difficulties in selection of the best outcome measure are among the **most** frequently reported challenges." (PHYS12)

Table 9. List of the most frequent hedges and boosters found in the Physiotherapy database

Hedges	PHYS database frequency	Boosters	PHYS database frequency
may	79	show	60
could	29	however	30
suggest	28	demonstrate	19
might	26	most	19
possible	12	indicate	17
however	10	should	17
likely	10	confirm	12
would	10	determine	8
possibly	7	(is) essential	7
expect	6	evidence	5
seems	6	must	5
I believe	5	conclude	4
estimate	5	consistent with	4
partially	5	will	3
relatively	5	always	2

When the two disciplines were compared, the most frequently used hedges were found to be somewhat similar in both disciplines, while the most frequently used boosters were more diverse from each other. Hedges such as *may* and *could* are at the top of the list of the most frequently used hedges for both disciplines. Also, in these tables, it can be seen that both disciplines have *would, might, however, suggest, seems, likely, possible,* and *relatively* listed as the most frequent hedges. The most common boosters in these lists, on the other hand, are found to be *most, evidence, should, will, however, indicate,* and *confirm*. To sum up, we can say that 10 hedges and 7 boosters are used most commonly in both disciplines.

In terms of the categories of the most frequently used hedges and boosters, hedges were found to be in the same category for both disciplines, while boosters were in different categories. In both disciplines, the most frequently used hedges fall under the category of modal verbs *(e.g., may, could)*. The second category that contained the most frequently used hedges was epistemic adjectives, adverbs, and nouns

(e.g., likely, frequently). The last category, lexical verbs, was less frequent in both disciplines *(e.g., seem, suggest)*. In terms of the most frequently used boosters, the two disciplines showed some differences. In English Language Teaching, the most frequently used boosters fall under the category of epistemic adjectives, adverbs, and nouns *(e.g., actually, generally)*. In Physiotherapy, the most frequently used boosters fall under the category of lexical verbs *(e.g., show, demonstrate)*.

4. Results and discussion

This study aimed to examine the use of hedges and boosters in two disciplines, namely the English Language Teaching and Physiotherapy, and to compare the number of hedges and boosters that these two disciplines employ in the discussion sections of their research articles. 15 papers from English Language Teaching and 15 papers from Physiotherapy were chosen and analyzed for this purpose. The results obtained from the frequency analysis indicated that hedges outnumbered boosters in both disciplines. This result is similar to Hyland's (1998) findings, as he also found out that hedges exceeded boosters by nearly 3 to 1. These results may imply that in recent trends of academic writing, reducing the strength of claims is still more prevalent than emphasizing the strength of claims. In some ways, the use of hedges and boosters can be considered as an individual decision made by a researcher based on their personality, preferred writing style, and professional experiences. On the other hand, hedges are also commonly used as a politeness strategy to acknowledge any flaws in claims (Demirel, 2019). This might lead us to conclude that it is more conventional to use hedging for the purpose of saving face, whereas it is less widespread to use boosting for showing a persistent stance in one's claims.

When the two disciplines were compared, results showed that the differences between the two disciplines in terms of their use of hedges were significantly different and meaningful. This result is parallel with the findings of Sepehri, Hajijalili, and Namaziandost (2019), who found that the differences between the frequencies of hedges used in medical sciences and engineering research articles were significantly different. Takimato (2015) states that the decisions authors make in academic writing tend to be constrained by the discourse norms and rhetorical styles of each discipline and reflect the nature of several disciplinary characteristics. In the field of second/foreign language education, information is more interpretative compared to the field of physiotherapy, which tends to have more objective results after a study. On the other hand, there were no significant differences in terms of the frequencies of boosters. Considering the fact that hedges outnumbered boosters in both fields, we may conclude that regardless of the academic field, research articles create some space for uncertainty by avoiding the overuse of boosters.

As for of the categories of hedges, the results of this study are in parallel with the findings of Hyland (1998), as he found that in all the disciplines he examined, the most frequently used hedges were modal verbs. The results of this study also showed that in both English Language Teaching and Physiotherapy disciplines, the most frequently used hedges were modal verbs. As for the most commonly used categories of boosters, this study revealed that Physiotherapy research articles employed lexical verbs most commonly. This result is in contrast with the findings of Sepehri, Hajijalili, and Namaziandost (2019), who found that epistemic nouns and adjectives were the most common boosters in medical research articles.

The vagueness of academic writing context is often overlooked, particularly by non-native English speakers. As a result, every factor that influences how authors express themselves in academic writing remains unnoticed. When it comes to reducing and enhancing claims in academic writing, the current

study focused on the two different disciplines of soft sciences to compare the use of hedges and boosters. This study was conducted to reveal the frequencies and types of hedges and boosters, which may help authors of academic papers, ESL/EFL learners and instructors to gain more insights into how to write academic papers.

There are also some limitations of the current study. The first limitation is that this study focuses on two disciplines, namely English Language Teaching and Physiotherapy, which are both considered as soft sciences. Furthermore, only one discipline from educational sciences and one discipline from medical sciences were compared to see whether there were any significant differences in terms of their use of hedges and boosters in academic articles. The number of research articles analyzed could be another limitation since only 15 English Language Teaching and 15 Physiotherapy articles were examined in the scope of this study. Additionally, this study did not take into consideration the number or the native and non-nativeness status of the authors. Finally, this study only examined the discussion sections of research articles and did not focus on the other sections. All these limitations provide some implications for further studies. For instance, further studies can compare some other disciplines from both soft and hard sciences and examine among more than two disciplines from these sciences. Moreover, future studies can be conducted by looking into more research articles, considering different variables such as the number and native and non-nativeness status of authors. Lastly, further studies may examine research articles as a whole or analyze different sections of them.

Acknowledgments: The authors would like to thank Assoc. Prof. Dr. Çağla ATMACA, the two anonymous reviewers, and the editor for their valuable comments and feedback.

Appendices

Appendix 1. Selected English Language Teaching Research Articles

ELT1: Elvis Wagner, Yen-Fen Liao & Santoi Wagner (2021) Authenticated Spoken Texts for L2 Listening Tests, Language Assessment Quarterly, 18:3, 205-227, DOI: 10.1080/15434303.2020.1860057

ELT2: Daniel R. Isbell (2021) Can the Test Support Student Learning? Validating the Use of a Second Language Pronunciation Diagnostic, Language Assessment Quarterly, 18:4, 331-356, DOI: 10.1080/15434303.2021.1874382

ELT3: Mi Sun Park (2020) Rater Effects on L2 Oral Assessment: Focusing on Accent Familiarity of L2 Teachers, Language Assessment Quarterly, 17:3, 231-243, DOI: 10.1080/15434303.2020.1731752

ELT4: Md. Maksud Ali & M. Obaidul Hamid (2020) Teaching English to the Test: Why Does Negative Washback Exist within Secondary Education in Bangladesh?, Language Assessment Quarterly, 17:2, 129-146, DOI: 10.1080/15434303.2020.1717495

ELT5: Tziona Levi & Ofra Inbar-Lourie (2020) Assessment Literacy or Language Assessment Literacy: Learning from the Teachers, Language Assessment Quarterly, 17:2, 168-182, DOI: 10.1080/15434303.2019.1692347

ELT6: Ikkyu Choi & Paul Deane (2021) Evaluating Writing Process Features in an Adult EFL Writing Assessment Context: A Keystroke Logging Study, Language Assessment Quarterly, 18:2, 107-132, DOI: 10.1080/15434303.2020.1804913

ELT7: Heleen Bourdeaud'Hui, Koen Aesaert & Johan van Braak (2021) Exploring the Validity of a Comprehensive Listening Test to Identify Differences in Primary School Students' Listening Skills, Language Assessment Quarterly, 18:3, 228-252, DOI: 10.1080/15434303.2020.1860059

ELT8: David MacGregor, Shu Jing Yen & Xin Yu (2022) Using Multistage Testing to Enhance Measurement of an English Language Proficiency Test, Language Assessment Quarterly, 19:1, 54-75, DOI: 10.1080/15434303.2021.1988953

ELT9: Kellie Frost, Gillian Wigglesworth & Josh Clothier (2021) Relationships between Comprehension, Strategic Behaviours and Content-Related Aspects of Test Performances in Integrated Speaking Tasks, Language Assessment Quarterly, 18:2, 133-153, DOI: 10.1080/15434303.2020.1835918

ELT10: Mahdieh Noori & Seyyed-Abdolhamid Mirhosseini (2021) Testing Language, but What?: Examining the Carrier Content of IELTS Preparation Materials from a Critical Perspective, Language Assessment Quarterly, 18:4, 382-397, DOI: 10.1080/15434303.2021.1883618

ELT11: Senyung Lee, Gad S. Lim & Rachel Basse (2021) The Effect of Additional Time on the Quality of Argumentation in L2 Writing Assessment: A Mixed-methods Study, Language Assessment Quarterly, 18:3, 253-272, DOI: 10.1080/15434303.2021.1872080

ELT12: Hannelore Hooft, Mariet Schiepers & Goedele Vandommele (2021) Developing and Validating a Multilingual Literacy Test for Asylum Seekers, Language Assessment Quarterly, 18:5, 530-546, DOI: 10.1080/15434303.2021.1931230

ELT13: Karin Vogt, Dina Tsagari, Ildikó Csépes, Anthony Green & Nicos Sifakis (2020) Linking Learners' Perspectives on Language Assessment Practices to Teachers' Assessment Literacy Enhancement (TALE): Insights from Four European Countries, Language Assessment Quarterly, 17:4, 410-433, DOI: 10.1080/15434303.2020.1776714

ELT14: Olena Rossi & Tineke Brunfaut (2021) Text Authenticity in Listening Assessment: Can Item Writers Be Trained to Produce Authentic-sounding Texts?, Language Assessment Quarterly, 18:4, 398-418, DOI: 10.1080/15434303.2021.1895162

ELT15: Soohye Yeom & Henry Jun (2020) Young Korean EFL Learners' Reading and Test-Taking Strategies in a Paper and a Computer-Based Reading Comprehension Tests, Language Assessment Quarterly, 17:3, 282-299, DOI: 10.1080/15434303.2020.1731753

Appendix 2. Selected Physiotherapy Articles

PHYS1: Juan A. Pineda-Juárez, Mariel Lozada-Mellado, Andrea Hinojosa-Azaola, José M. Garcı̄a-Morales, Midori Ogata-Medel, Luis Llorente, Jorge Alcocer-Varela, Arturo OreaTejeda, Eduardo Martı̄n-Nares & Lilia Castillo-Martı̄nez (2022) Changes in hand grip strength and body weight after a dynamic exercise program and Mediterranean diet in women with rheumatoid arthritis: a randomized clinical trial, Physiotherapy Theory and Practice, 38:4, 504-512, DOI: 10.1080/09593985.2020.1777605

PHYS2: Jette Schack, aAre Hugo Pripp, Peyman Mirtaheri, Harald Steen, Evin Güler & Terje Gjøvaag (2022) Increased prefrontal cortical activation during challenging walking conditions in persons with lower limb amputation – an fNIRS observational study, Physiotherapy Theory and Practice, 38:2, 255-265, DOI: 10.1080/09593985.2020.1758979

PHYS3: Ana Paula Coelho Figueira Freire, Carlos Augusto Marçal Camillo, Bruna Spolador de Alencar Silva, Juliana Souza Uzeloto, Fabiano Francisco de Lima, Luis Alberto Gobbo, Dionei Ramos & Ercy Mara Cipulo Ramos (2022) Resistance training using different elastic components offers similar gains on muscle strength to weight machine equipment in Individuals with COPD: A randomized controlled trial, Physiotherapy Theory and Practice, 38:1, 14-27, DOI: 10.1080/09593985.2020.1716422

PHYS4: Giordano Márcio Gatinho Bonuzzi, Tatiana Beline de Freitas, Gisele Carla dos Santos Palma, Marcos Antonio Arlindo Soares, Belinda Lange, José Eduardo Pompeu & Camila Torriani-Pasin (2022) Effects of the brain-damaged side after stroke on the learning of a balance task in a non-immersive virtual reality environment, Physiotherapy Theory and Practice, 38:1, 28-35, DOI: 10.1080/09593985.2020.1731893

PHYS5: Raúl Pérez-Llanes, Javier Meroño-Gallut, Elena Donoso-Úbeda, José LópezPina & Rubén Cuesta-Barriuso (2022) Safety and effectiveness of fascial therapy in the treatment of adult patients with hemophilic elbow arthropathy: a pilot study, Physiotherapy Theory and Practice, 38:2, 276-285, DOI: 10.1080/09593985.2020.1744207

PHYS6: Ole Petter Norvang, Torunn Askim, Thorlene Egerton, Anne Eitrem Dahl & Pernille Thingstad (2022) Associations between changes in gait parameters, balance, and walking capacity during

the first 3 months after stroke: a prospective observational study, Physiotherapy Theory and Practice, 38:4, 534-542, DOI: 10.1080/09593985.2020.1771802

PHYS7: Mania Sheikh & Hossein Asghar Hosseini (2022) Investigating the relationship between spatiotemporal gait variability and falls self-efficacy in individuals with chronic stroke, Physiotherapy Theory and Practice, 38:4, 543-551, DOI: 10.1080/09593985.2020.1771799

PHYS8: Bruna do Nascimento, Katherinne Franco, Yuri Franco & Cristina Nunes Cabral (2022) Can psychological factors be associated with the severity of pain and disability in patients with fibromyalgia? A cross-sectional study, Physiotherapy Theory and Practice, 38:3, 431-440, DOI: 10.1080/09593985.2020.1765439

PHYS9: Rafael Mucarsel Linhares, Ana Izabel Lopes Cunha, Stefany Lorena Nascimento Da Cruz & Natalia Aquaroni Ricci (2022) Perceptions of older adults living in long-term care institutions regarding recreational physiotherapy: a qualitative study, Physiotherapy Theory and Practice, 38:1, 67-75, DOI: 10.1080/09593985.2020.1728795

PHYS10: Kristin Lowry, Taylor Woods, Amanda Malone, Alex Krajek, Ann Smiley & Jessie Van Swearingen (2022) The Figure-of-8 Walk Test used to detect the loss of motor skill in walking among persons with Parkinson's disease, Physiotherapy Theory and Practice, 38:4, 552-560, DOI: 10.1080/09593985.2020.1774948

PHYS11: Frank T. Tudini, Bradley J. Myers & Richard W. Bohannon (2022) Forward flexed posture: reliability and determinants of tragus-to-wall measurement, Physiotherapy Theory and Practice, 38:4, 579-586, DOI: 10.1080/09593985.2020.1771801

PHYS12: Saeideh Monjezi, Farshad Molhemi, Mohammad-Jafar Shaterzadeh Yazdi, Reza Salehi, Mohammad Mehravar & Davood Kashipazha (2022) Responsiveness and clinically meaningful changes for the Persian versions of the multiple sclerosis walking scale-12 and the modified fatigue impact scale following balance and gait rehabilitation in people with multiple sclerosis, Physiotherapy Theory and Practice, 38:3, 464-470, DOI: 10.1080/09593985.2020.1762267

PHYS13: Malin Sellberg, Kirsti Skavberg Roaldsen, Malin Nygren-Bonnier & Alexandra Halvarsson (2022) Clinical supervisors' experience of giving feedback to students during clinical integrated learning, Physiotherapy Theory and Practice, 38:1, 122-131, DOI: 10.1080/09593985.2020.1737996

PHYS14: Felipe González-Seguel, Agustin̄ Camus-Molina, Marcela Cárcamo, Stephanie Hiser, Dale M. Needham & Jaime Leppe (2022) Inter-observer reliability of trained physiotherapists on the Functional Status Score for the Intensive Care Unit Chilean-Spanish version, Physiotherapy Theory and Practice, 38:2, 365-371, DOI: 10.1080/09593985.2020.1753272

PHYS15: Sara Cederbom, Maria Bjerk & Astrid Bergland (2022) A qualitative study exploring physical therapists' views on the Otago Exercise Programme for fall prevention: a stepping stone to "age in place" and to give faith in the future, Physiotherapy Theory and Practice, 38:1, 132-140, DOI: 10.1080/09593985.2020.1731895

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