



Analyzing Metadiscourse Markers in Introduction Chapters of Dissertation in Various Disciplines

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Abstract. To write our dissertations effectively, we need some instruments called metadiscourse markers. These instruments are considered one of the essential elements in giving information through various linguistic expressions with cohesive and logical structures (Mina & Biria, 2017). Therefore, this study aims to identify metadiscourse in a targeted sample of 100 English introduction chapters of a dissertation written by native English speakers and Indonesian using Hyland's taxonomy. The samples were selected randomly and published between 2000 and 2019. Metadiscourse markers are used as one of the tools that make writing more effective in a social environment and are regarded as one of the most important features in communication among people for expressing information through different linguistic expressions with cohesive and logical constructions. Accordingly, the present study aimed to identify interactive and interactional metadiscourse in a targeted sample of 100 English dissertation introductions written by native English speakers and Indonesian writers utilizing Hyland's taxonomy. The sample included the discussion sections of randomly selected articles with 70000 running words. The overall findings disclosed that, in the interactive metadiscourse category, transitions, frame markers, and evidentials in linguistics were more frequent than those in Education field. The results further revealed that endophoric markers and code glosses were almost the same. In interactional metadiscourse corpora, however, the findings demonstrated that writers used hedges, boosters, and self-mentions more frequently in linguistics than in the education. Comparatively, the discussion sections in linguistics texts contained a higher percentage of engagement markers. It was also found that there was no significant difference in the use of attitude markers in both disciplines. Notably, the linguistics authors seemingly preferred to employ interactive metadiscourse markers more, while in the education field, authors used interactional metadiscourse markers more frequently in their dissertation introductions.

Keywords: metadiscourse markers · introduction chapters · various disciplines

1 Introduction

Harris was the first scholar to use the term “metadiscourse.” He said in 1965 that metadiscourse is a method for understanding language in use that helps the author or speaker guide the audience’s understanding of a work (quoted in Hyland, 2004). Metadiscourse has been subject to a variety of interpretations and classifications (Crismore, 1993; Vande Kopple, 1985). According to Vande Kopple (1985), “metadiscourse” is a discourse about discourse and emphasizes the writer’s or speaker’s use of language in his text to establish a connection with his readers. In contrast to Vande Kopple’s definition, Crismore, Markkanen, and Steffensen (Crismore, Markkanen, & Steffensen, 1993) define metadiscourse as “linguistic material in spoken or written texts that does not add anything to the propositional content but that is intended to help the listener or reader organize, interpret, and evaluate the information provided.”

We need tools called metadiscourse markers to express ideas and transfer information in order to write dissertations or articles that are effective. The authors relate themselves to their discourse, expressing their commitments and ideas through the usage of metadiscourse markers (Hyland, 2005). The elements of metadiscourse are rhetorical devices that facilitate reading and draw readers’ attention to the author of a work. These self-reflexive statements not only help readers and writers connect through the text, but they have also gained significant acknowledgment in academic discourse studies (Aguilar, 2008; Hyland, 2005). A few earlier studies have demonstrated that some elements, such as genre (Kuhi & Behnam, 2011), language/culture (Loi & Lim, 2013; Mur Dueas, 2011), and field of study (Abdi, 2002; Hyland, 2004; Khedri, Heng, & Ebrahimi, 2013), might have an impact on the usage of metadiscourse in academic communication.

The present study sought to examine the type and frequency of metadiscourse markers in introduction dissertations by comparing their frequencies in the fields of physics, linguistics, engineering, and education written by Native English Speakers and Indonesian. This was done in light of the significant role that metadiscourse plays in academic writing. The introduction chapters of dissertations were the primary focus of the current study because they must contain all pertinent definitions and methodologies to be used in the dissertation study, summarize such detail into coherent words, and demonstrate perfected writing skills that can effectively bridge the gap between the recent and the past studies in an engaging manner that maintains the reader’s attention.

Writing is a skill that plays a significant role in learning EFL. Even if they are proficient writers, doctorate students’ academic writing comprehension occasionally falls short of their general English writing comprehension. They might struggle to write coherent writings or effectively communicate their views to audiences. The writers may be unable to produce a cohesive and coherent text if they are not familiar with the concepts of cohesion and cohesiveness. Metadiscourse markers can be employed as one of the fundamental rhetorical components in composing texts and persuading writers, according to Hyland (1998). Part of the solution to this issue can be found in awareness of metadiscourse markers. Although the idea of metadiscourse is not new, it is more vital when writing and reading academic writing. It is also a significant issue when speaking and listening.

The current article seeks to accomplish goals. First, investigate how dissertation introductions in four disciplines—physics, linguistics, engineering, and education—use metadiscourse markers. Becher’s (1994) four major disciplinary groupings—“hard-pure,” “soft-pure,” “hard-applied,” and “soft-applied”—serve as the foundation for the four disciplines. Analyzing the use of metadiscourse markers by native and non-native Indonesian English speakers is the second step. Third, comparing the ways that NES and Indonesian writers used interactive and interactional metadiscourse markers in the beginning to their dissertations in four different disciplines. The research questions are as follow:

- 1) How metadiscourse markers are used differently from Native English Speakers (NES) and Non-Native English Speakers (NNES)?
- 2) How interactive and Interactional metadiscourse markers are used in 4 different disciplines and written by NES and NNES?

The answers to the two research questions will help material developers create texts and instructions that are appropriate for learners and help teachers of English language understand their students’ strengths and weaknesses in relation to metadiscourse markers. The results of this study will also influence future PhD students’ use of various metadiscourse markers in academic writing, particularly in widely distributed dissertations.

2 Literature Review

Based on Hyland’s (Hyland & Tse, 2004) taxonomy of interpersonal metadiscourse markers (interactive and interactional), the metadiscourse indicators were discovered and grouped. It was separated into categories, each of which is described in Table 1.

Table 1. A model of metadiscourse in academic texts defined by Hyland (2005).

Interpersonal model of metadiscourse, interactive markers		
Macro category	Subcategory	Examples
1. Transitions	a) Addition	And, furthermore, moreover, also, in addition.
	b) Comparison	In contrast, however, but, on the other hand, yet.
	c) Consequence	Consequently, after all, then, therefore, as a consequence.
2. Frame markers	a) to sequence.	(in) Chapter X, first, next, lastly, I begin with, last.
	b) to label stages	At this point, in conclusion, on the whole, so far, overall, to conclude.
	c) to announce goal	Aim, desire to, focus, intend to, objective, purpose, want to.

(continued)

Table 1. (continued)

Interpersonal model of metadiscourse, interactive markers		
Macro category	Subcategory	Examples
	d) to shift topic	Back to, in turn, with regard to, return to, revisit
3. Endophoric markers		(in) appendix X, page X, Table X, X above, X below, X earlier.
4. Evidentials		According to X, cited, mentioned, quoted, stated.
5. Code glosses		As a matter of fact, called, for example, for instance.
Interpersonal model of metadiscourse, interactional markers		
1. Hedges	a) Epistemic verb	Assume, can, claim, estimate, indicate, may, need, suggest.
	b) Probability adverbs	About, almost, fairly, frequently, generally, maybe, perhaps, possibly.
	c) Epistemic Expressions	Apparent, most, possible, probable, typical, uncertain.
2. Boosters	a) Intensifier adverbs	Actually, absolutely. Always, certainly, clearly, definitely, in fact, never, obviously.
	b) Intensifier adjectives	Certain, evident, it is clear that, obvious, true.
	c) Intensifier Verbs	Decide, demonstrate, find, found, know, prove, show
3. Attitude Markers	a) Attitude Verbs	Agree, appear, believe, consider, expect, feel, notice, predict, presume, propose.
	b). Attitudinal verbs	Correctly, deeply, extremely, fortunately, greatly, importantly, particularly, significantly.
	c). Attitudinal adjectives	Appropriate, desirable, essential, important, inappropriate, interesting, unusual, usual.
4. Self-mention		I, my, our, the author(s), the writer(s), we.
5. Engagement Markers	a). Directive imperatives	Deal with, note, note that, think about.
	b). Obligation modals	Do not, have to, must, need to, should, would, would not.
	c). Reader pronoun	One's, you, your.

Interactive metadiscourse is categorized by Hyland (2005) into five main groups: transitions, frame markers, endophoric markers, evidentials, and code glosses. Two of them include a few subcategories to indicate their important forms in the text. Each major category has a certain purpose. As was the case with the outside world, transitions entail a variety of tools, mostly conjunctions, that are used to denote additive, contrastive, and consequential steps in the discourse. Text borders or schematic text structure elements, such as those used to sequence, label text stages, announce discourse goals, and reflect topic shift, are referred to as frame markers. By pointing to other passages in the text, endophoric markers make extra information available and crucial to the reader in helping them understand the author's intentions. Evidentials demonstrates the origin of the textual information, which comes from outside the context of the current text. Code glosses provide reference to the restatement of the conceptual information.

Hedge, booster, attitude marker, self-mentions, and engagement markers are the five primary kinds of interactional metadiscourse, each having a distinct function. They were separated into a few different subcategories. Hedges (epistemic expressions, probability adverbs, and epistemic verbs) show the author's reluctance to definitively present propositional knowledge. Boosters, which include intensifier verbs, intensifier adjectives, and intensifier adverbs, highlight the force of propositions and indicate certainty. The use of attitude markers, including as attitude verbs, attitudinal verbs, and attitudinal adjectives, conveys how the author feels about a proposition by expressing surprise, force, approval, importance, and other emotions. First-person pronouns that are used to refer to oneself (self-mentions) reveal the level of the writer's presence in the text in terms of possessives and first-person pronouns, as well as the text's schematic structure, which includes elements used to sequence, identify text stages, declare discourse goals, and represent subject shifts. By either deliberately drawing readers' attention to them or by including them as text participants through the use of second person, pronouns, imperatives, question forms, and other devices, engagement markers (directive imperatives, obligation modals, and reader pronoun) specifically refer to the readers (Hyland, 2001).

3 Method

3.1 Sample and Population

The current study looked at Dissertation Introductions (DIs) from a variety of disciplines written by native English speakers and Indonesians. The sample for this study consisted of 200 English dissertation introductions written over the course of the last 19 years, from 2000 to 2019. Initially, the researcher had intended to locate DIs from the previous 10 years, but she ran into difficulty locating 25 Indonesian PhD students who had written dissertations in each discipline, so she decided to extend the time period. Each discipline grouping was represented by one subject of study, with Physics standing in for a hard-pure field, Linguistics for a soft-pure field, Engineering for a hard-applied field, and Education for a soft-applied field. There was no study that looked at English-language dissertation introductions written by Indonesian PhD candidates, which is why those individuals were chosen (Table 2).

The researcher randomly chose each sample during the sample collection process from the online database at Khon Kaen University's ProQuest Dissertations & Theses

Table 2. Description of sample

No.	Disciplinary Groupings	NES Writers	Indonesian Writers
1	'Hard-pure' (Physics)	25	25
2	'Soft-pure' (Linguistics)	25	25
3	'Hard-pure' (Engineering)	25	25
4	'Soft-Applied' (Education)	25	25
Total		100	100

Full Text. The researcher listed all of the sample authors in the appendix B because it is a public internet database. Eight sub-disciplines from two distinct sets of first language writers—Native English Speakers and Indonesian writers—made up the 200 total samples from the study's four primary disciplinary divisions. From this point forward, the sub-disciplines were denoted by the coding: NHP, NSP, NHA, NSA, IHP, ISP, IHA, and ISA. There were 50 dissertation introductions (DIs) for each subfield, 25 of which were written by native English speakers and 25 by PhD candidates from Indonesia. Hence the abbreviations: NSP 1-25 was for soft-pure (linguistics) DIs written by NES, NHA 1-25 was for hard-applied (engineering) DIs written by NES, and NSA 1- 25 was for soft-applied (education) DIs written by NES. NHP 1–25 was for hard–pure (physics) DIs. While the following abbreviation is used for Indonesian PhD students: IHP 1–25 represented hard-pure (Physics) DIs authored by Indonesians, ISP represented soft-pure (Linguistics) DIs, IHA represented hard-applied (Engineering) DIs, and ISA represented soft-applied (Education) DIs (see Table 3).

Table 3. Description of data

Disciplinary Groupings	NES	Code N = NES	Indonesian Writers	Code I= Indonesian
'Hard-pure' (HP)	25	NHP 1- 25	25	IHP 1- 25
'Soft-Pure' (SP)	25	NSP 1- 25	25	ISP 1-25
' Hard-Applied' (HA)	25	NHA 1-25	25	IHA 1-25
' Soft-Applied' (SA)	25	NSA 1-25	25	ISA 1-25
Total	100		100	

There were four disciplinary groups written by NES and NNES, so there were eight groups for all of them. In total, NES wrote about 230406 words ($Mean = 9216.24$, $SD = 2681.15$) and Indonesian PhD students wrote about 306964 words ($Mean=12278.56$, $SD = 3368.09$). The disciplinary groups of NES whose introductions were the longest and the shortest were *soft-pure*: 81124 words ($Mean: 3244.96$, $SD = 1463.82$) and *hard-applied*: 47579 ($Mean = 1903.16$, $SD = 843.04$). While from Indonesian PhD Students, the longest and shortest introductions were *soft-pure*: 126663 words ($Mean = 5066.52$, $SD = 2414.69$) and *hard-applied*: 43021 words ($Mean = 1720.84$, $SD = 687.88$), respectively. Individually, the longest and shortest of all NES introductions were *soft-pure* (NSP 24= 7094 words) and *hard-pure* (NHP 5 = 410 words), while in Indonesian, the longest and the shortest were *soft-pure* (ISP 18 = 10095 words) and *hard-applied* (IHA 22 = 407 words), respectively.

In the process of data collection, all the 200 files of dissertation introductions were examined using the code scheme for moves and steps and code scheme for metadiscourse. The researcher read and examined all the dissertation introduction one by one, phrase by phrase. The phrase involved identification of moves used in each introduction. The identification of the boundaries of each move is according to semantic and pragmatic measure rather than on linguistics indication. This is as a result of moves which vary in length and they can be recognize by sentence by sentence or short phrase or clause (Al-Ali, 2004; Bhatia, 1993; Henry&Roseberry, 2001; Swales, 1990). Once a specific barrier in the introductions realizes as a move, it annotated with a code. Afterwards, the researchers identified and counted all moves, the occurrences of moves and steps, the number of moves and steps, and the move arrangements. Apart of the moves themselves, texts in each move of each introduction were examined in the AntConc program in order to analyze the linguistic features. Then after identifying the moves, steps, and metadiscourse, the writer concluded about the similarities and differences of Dissertation Introductions in this study.

4 Finding and Discussion

4.1 The Use of Interactive Metadiscourse Markers in the Corpus

According to the interactive metadiscourse markers finding in the Table 4, it shows that both group of writers, the Native English Speakers and Indonesian writers used all the interactive metadiscourse category. It shows that Indonesian PhD students used interactive metadiscourse more frequently compared to the Native English Speakers, the total of interactive markers used by Indonesia was 21605 while NES was 16670. The highest use of category was transition markers written by Indonesian PhD writer with 14393 occurrences. The second-highest category was evidentials written by Indonesian with 3433 occurrences. The third-highest category was frame markers with 1515 occurrences written by Indonesian writers. The fourth-highest category was code glosses with 1496 occurrences, and the last category was endophoric markers with 768 occurrences.

Both Native English Speakers and Indonesian PhD students used transition the most in interactive markers. Transitions is a significant element in dissertation introduction because the function is to describe internal correlations in the discourse. The transitions show over of 66 % of all metadiscourse in the corpus (Total interactive markers is 38275,

Table 4. Metadiscourse in dissertation introductions

Category	NES	IDN	All
Transitions	10974	14393	25367
Frame markers	1180	1515	2695
Endophorics	623	768	1391
Evidentials	2937	3433	6370
Code glosses	956	1496	2452
Interactive	16670	21605	38275
Category	NES	IDN	All
Hedges	2418	3165	5583
Boosters	719	895	1614
Attitude markers	822	1114	1936
Self-mentions	1427	2551	3978
Engagement markers	707	873	1580
Interactional	6093	8598	14691

total transitions is 25367: 66.3%). It is demonstrating the writers' consideration that the readers are capable to restore their understanding without ambiguity.

In interactional metadiscourse markers column, it shows that Indonesian PhD students used interactional metadiscourse more frequently compared to the Native English Speakers, the total of interactional markers used by Indonesia was 8598 while NES was 6093. The highest use of category was hedges written by Indonesian PhD writer with 3165 occurrences. The second-highest category was self-mention written by Indonesian with 2551 occurrences. The third-highest category was attitude markers with 1114 occurrences written by Indonesian writers. The fourth-highest category was boosters with 895 occurrences, and the last category was engagement markers with 873 occurrences. The high use of hedges reflecting the crucial significance of differentiating conviction from idea in dissertation introduction and the demand for writers to assess their statement in effective way.

Chi-square tests were used to look for potentially significant variations in the use of metadiscourse markers between the Indonesian PhD students and the NES. The number of interactive markers (transition markers, frame markers, evidentiary, and code glosses) employed by writers in both groups and across four fields varied significantly ($p < 0.05$), as shown in Table 5. When compared to native English speakers, it was discovered that the Indonesian writers of dissertation openings employed them more frequently. The use of endophoric markers differed not significantly ($p > 0.05$) between the two groups.

There was a significant difference between the usage of addition, comparison, and consequence in dissertation introductions written in NES and Indonesian in each of the subcategories of transition markers ($p < 0.05$). There was a significant difference ($p < 0.05$)

Table 5. Interactive metadiscourse markers and the Chi-square used in the corpus.

Category	NES		IDN		Chi square Test		
	F	P	F	P	X2	Df.	Sig.
Transition Markers							
addition	9020	54.1	11343	52.5	1703.417	1332	<.001
Comparison	1127	6.8	1712	7.9	1356.984	1015	<.001
Consequence	827	4.9	1338	6.2	1618.084	980	<.001
Total	10974	65.8	14393	66.6	7669.728	4216	<.001
Frame Markers							
Sequencing	573	3.4	780	3.6	925.307	594	<.001
Label Stages	118	0.7	170	0.8	143.834	90	<.001
Announce Goals	430	2.6	466	2.2	511.630	357	<.001
Shift Topic	59	0.3	99	0.5	143.650	80	<.001
Total	1180	7.1	1515	7.1	2744.463	1088	<.001
Endophoric Markers	623	3.7	768	3.5	413.980	399	0.292
Evidentials	2937	17.6	3433	15.9	280.667	240	0.037
Code Glosses	956	5.7	1496	6.9	1247.704	990	<.001
Total	16670	100.0	21605	100.0	6800.968	5964	<.001

Note= F: Frequency, P: Percentage.

between the two groups’ usage of sequencing, labeling stages, announcing goals, and shifting topics in each of the frame marker subcategories. Additionally, there was a significant difference (p 0.05) between evidentials and code glosses.

The use of interactive metadiscourse markers in the dissertation introductions by NES and Indonesian authors in the hard-pure, soft-pure, hard-applied, and soft-applied fields generally showed a significant difference (p 0.05). In other words, they appeared far more frequently in the dissertation introductions written in Indonesian than in the ones published in NES.

4.2 The Use of Interactional Metadiscourse Markers in the Corpus

Table 6 lists the amount of interactional metadiscourse markers (IMMs) in each category across two sub-corpora (NES and NNEs). The percentage of hedges, boosters, attitude markers, self-mention, and engagement markers was considerably higher in the dissertation openings written in Indonesian than in those written in NES. Between the two of them, there was also a significant difference (p 0.05). The application of the self-mention and engagement indicators did not differ significantly (p>0.05) between the two groups. A significant difference between the two groups was seen in each of the hedge subcategories (p 0.05). More often than NES writers, Indonesian writers used epistemic verbs, probability adverbs, and epistemic formulations.

Table 6. Interactional metadiscourse markers and the Chi-square used in the corpus

Category	NES		IDN		Chi Square Test		
	F	P	F	P	X2	Df	Sig.
Hedges							
Epistemic verbs	1428	23.4	1884	21.9	1045.417	800	< 0.01
Probability adverbs	628	10.3	792	9.2	438.889	315	< 0.01
Epistemic expressions	362	5.9	489	5.7	266.000	210	< 0.01
Total	2418	39.7	3165	36.8	2909.392	1505	< 0.05
Boosters							
Intensifier adverbs	277	4.5	267	3.1	334.650	208	< 0.01
Intensifier adjectives	93	1.5	151	1.7	122.083	99	0.058
Intensifier verbs	349	5.7	477	5.5	376.056	323	<0.05
Total	719	11.8	895	10.4	1178.676	728	<0.05
Attitude Markers							
Attitude verbs	329	5.4	435	5.0	228.443	324	1.000
Attitudinal adverbs	169	2.8	254	2.9	205.053	144	<0.05
Attitudinal adjectives	324	5.3	425	4.9	339.940	195	<0.01
Total	822	13.5	1114	12.9	189.132	754	<0.05
Self-mention	1427	23.4	2551	29.7	389.000	360	0.141
Engagement markers							
Directive imperative	37	0.6	61	0.7	40.533	36	0.277
Obligation modals	596	9.8	634	7.4	413.778	380	0.112
Reader pronoun	74	1.2	178	2.1	67.000	64	0.375
Total	707	11.6	873	10.2	802.493	667	0.764

Note: F: Frequency P: Percentage

The usage of epistemic verbs, probability adverbs, and epistemic expressions in dissertation introductions written by NES and Indonesian differed significantly ($p < 0.05$) in each of the subcategories of hedges. The use of intensifier adverbs and intensifier verbs varied significantly between the two groups in the booster subcategory. However, there was no discernible difference between the two groups of writers' use of intensifier adjectives (boosters) ($p > 0.05$).

The application of attitude verbs (subcategories of attitude markers) was not significantly different between the two groups ($p > 0.05$), but there was a significantly different application of attitude adverbs and adjectives ($p < 0.05$) in these corpora. Additionally, there was no significant difference in self-mention ($p > 0.05$). In addition, among all categories of interactional indicators between NES and Indonesian writers, the percentage of self-mention was the highest (2551). There was no statistically significant difference

among the reader pronoun, directed imperatives, and obligation modals in any of the engagement marker subcategories ($p > 0.05$).

Although attitude verb use (subcategories of attitude markers) did not change substantially between the two groups ($p > 0.05$), attitude adverb and adjective use did differ significantly ($p < 0.05$) in these corpora. Furthermore, self-mention showed no discernible difference ($p > 0.05$). The percentage of self-mention was also the greatest (2551) out of all categories of interactional indicators between NES and Indonesian authors. In any of the engagement marker subcategories, there was no statistically significant difference between the reader pronoun, directed imperatives, and obligation modals ($p > 0.05$).

5 Conclusion

Native English Speakers and Indonesian writers employed all the interactive and interactional metadiscourse categories. It was found that Indonesian PhD students used interactive and interactional metadiscourse more frequently compared to the Native English Speakers. In interactive category, the highest occurrences were transition marker used by Indonesian writers. In interactional category, the highest occurrences were hedges by Indonesian writers.

The total of interactive markers used by Indonesia was 21605 while NES was 16670. The highest use of category was transition markers written by Indonesian PhD writer with 14393 occurrences. The second-highest category was evidentials written by Indonesian with 3433 occurrences. The third-highest category was frame markers with 1515 occurrences written by Indonesian writers. The fourth-highest category was code glosses with 1496 occurrences, and the last category was endophoric markers with 768 occurrences. The results from the Chi-Square tests showed that there was a significant difference ($p < 0.05$) between the use of interactive and interactional metadiscourse markers in the dissertation introductions written by NES and Indonesian of hard-pure, soft-pure, hard-applied, and soft-applied field. That is, Indonesian writers significantly used more metadiscourse markers in the dissertation introductions than NES.

In interactional metadiscourse markers, the finding shows that Indonesian PhD students used interactional metadiscourse more frequently compared to the Native English Speakers, the total of interactional markers used by Indonesia was 8598 while NES was 6093. The highest use of category was hedges written by Indonesian PhD writer with 3165 occurrences. The frequent use of hedges highlights how crucial it is to distinguish fact from opinion in academic writing and how important it is for authors to assess their claims in ways that are likely to persuade readers.

Considering that cultural choices may have an impact on how metadiscourse markers are used in texts, as suggested by Dafouz (2003), Hyland (2004), and Noorian and Biria (2010), such results might be directly tied to the writers' cultural preferences. As a result, the selection of those identifiers may vary between writers from different cultural backgrounds. Additionally, the chosen topics for the dissertation introductions may have an impact on the results of the current study. For these two reasons, the current study recommends that future research examine the use of interactive and interactional metadiscourse markers by choosing more disciplinary fields or by conducting contrastive studies to compare Indonesian writers' choice of markers with that of other writers

from various cultural backgrounds. To have a greater understanding of this subject, the interested researchers may also increase the corpus size, in this case the number of chosen dissertation introductions.

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