Use of Comparison and Contrast Transition Signals in Thai EFL Students' Writing: A Corpus-Based Study*

Wannasiri Thummanuruk**

Research Article
Abstract
Keywords

To build a well-organized comparative text, the effective use of cohesive devices, especially comparison and contrast (CC) transition signals, is essential for comparing and contrasting ideas and connecting clauses, sentences, or paragraphs. This study thus aims to investigate the use of 19 CC transition signals in expository compositions written by Thai EFL undergraduate English majors and further explore the usage patterns of CC transition signals commonly used by Thai students through the corpus of Contemporary American English (COCA). According to the AntConc analysis, the 5 most frequently used CC transition signals are *also*, *however*, *on the other hand*, *while*, and *in contrast*. A qualitative look revealed inappropriate use both semantically and syntactically of CC transition signals, namely unnecessary use, wrong form/format, non-equivalent exchange, omission, and wrong relation. Finally, further qualitative inspection of the grammatical patterns of the 5 most common CC transition signals in both the learner corpus and the COCA revealed that English native speakers employed a variety of patterns, especially a greater variety of the positions of CC transition signals while Thai students employed basic structures. Therefore, the study recommends an application of data-driven learning (DDL) and more exposure to appropriate English language input.

** Lecturer, Department of Foreign Languages, Faculty of Humanities, Kasetsart University, e-mail: wannasiri.t@ku.th

มหาวิทยาลัย
เกษตรศาสตร์
พ.ศ. ๒๔๘๐
คณะมนุษยศาสตร์

การใช้คำเชื่อมแสดงการเปรียบเทียบในงานเขียนภาษาอังกฤษของผู้เรียนชาวไทยซึ่งเรียนภาษาอังกฤษในฐานะภาษาต่างประเทศ: การศึกษาตามแนวทางภาษาศาสตร์คลังข้อมูล*

วรรณศิริ ธรรมานุรักษ์**

บทความวิจัย

บทคัดย่อ

คำสำคัญ

ผู้เรียนภาษาอังกฤษ
ในฐานะภาษาต่างประเทศ;
เรียงความเชิงอธิบาย;
คลังข้อมูลภาษาผู้เรียน;
คำเชื่อม;
คำเชื่อมแสดง
การเปรียบเทียบ

การเขียนบทความเชิงเปรียบเทียบที่มีโครงสร้างที่ดีจำเป็นต้องใช้คำเชื่อมต่างๆ อย่างถูกวิธี โดยเฉพาะอย่างยิ่งคำเชื่อมแสดงการเปรียบเทียบเพื่อเปรียบเทียบข้อมูลต่างๆ และเชื่อมอนุประโยค ประโยค หรือย่อหน้า งานวิจัยฉบับนี้มีวัตถุประสงค์เพื่อศึกษาการใช้คำเชื่อมแสดงการเปรียบเทียบ จำนวน 19 คำ ในเรียงความเชิงอธิบายของนักศึกษาชาวไทยซึ่งเรียนภาษาอังกฤษในฐานะภาษาต่างประเทศ ในระดับปริญญาตรี วิชาเอกภาษาอังกฤษ และศึกษาโครงสร้างการใช้คำเชื่อมที่นักศึกษาชาวไทยใช้บ่อยเพิ่มเติมจากคลังข้อมูลงานเขียนของเจ้าของภาษา The Corpus of Contemporary American English (COCA) จากการวิเคราะห์ด้วยโปรแกรม AntConc พบว่าคำเชื่อมที่ใช้บ่อยที่สุดมีจำนวน 5 คำ ได้แก่ *also, however, on the other hand, while* และ *in contrast* เมื่อวิเคราะห์เชิงคุณภาพ พบการใช้คำเชื่อมที่ไม่ถูกต้องทั้งในเชิงความหมายและเชิงโครงสร้าง ได้แก่ การใช้คำเชื่อมโดยไม่จำเป็นหรือซ้ำซ้อน (unnecessary use) การใช้คำเชื่อมผิดรูปแบบ (wrong form/ format) การเลือกใช้คำเชื่อมที่มีความหมายใกล้เคียงแต่ใช้แทนกันไม่ได้ (non-equivalent exchange) การละคำเชื่อมเมื่อจำเป็นต้องใช้ (omission) และการเลือกใช้คำเชื่อมไม่ตรงกับความหมาย (wrong relation) นอกจากนี้การวิเคราะห์โครงสร้างทางไวยากรณ์ของคำเชื่อมที่พบบ่อยที่สุดทั้ง 5 คำข้างต้นในคลังข้อมูลงานเขียนของนักศึกษาชาวไทยและคลังข้อมูลงานเขียนของเจ้าของภาษา พบว่าเจ้าของภาษาใช้คำเชื่อมในโครงสร้างที่หลากหลายมากกว่า โดยเฉพาะอย่างยิ่งการวางตำแหน่งของคำเชื่อมในขณะที่นักศึกษาชาวไทยใช้คำเชื่อมตามโครงสร้างพื้นฐาน ดังนั้นงานวิจัยนี้จึงเสนอให้ผู้สอนใช้วิธีการสอนที่อิงบนพื้นฐานของคลังข้อมูลภาษา (data-driven learning) และเพิ่มโอกาสในการรับข้อมูลภาษาอังกฤษที่เหมาะสม

** อาจารย์ประจำภาควิชาภาษาต่างประเทศ คณะมนุษยศาสตร์ มหาวิทยาลัยเกษตรศาสตร์ ติดต่อได้ที่: wannasiri.t@ku.th

107

วารสารมนุษยศาสตร์วิชาการ ปีที่ 31 ฉบับที่ 2 (กรกฎาคม-ธันวาคม 2567)
Journal of Studies in the Field of Humanities Vol.31 No.2 (July-December 2024)

1. Introduction

In Thai universities, where English is mainly taught as a compulsory subject, English writing skill poses a significant challenge for learners to acquire because it demands both syntactic and semantic knowledge (Boonyarattanasoontorn, 2017).

In academic writing, essays are categorized into different genres including argumentative, expository, narrative, and descriptive essays based on their communication purposes (Heuboech, 2009, as cited in Farneste, 2012). At the tertiary level, the expository essay, which relies on facts and research, is the most common type (Drew, 2023). It allows for various types of text organization, for example, description, sequence, cause and effect, problem and solution, and comparison and contrast (Meyer, 1999, as cited in Hammann & Stevens, 2003).

Students, from elementary through graduate school, find comparison and contrast writing more challenging than other organizational patterns (Hiebert et al., 1983, as cited in Hammann & Stevens, 2003). This could be because the foundation of comparison and contrast essay writing requires critical thinking skill as a means to clarify and sharpen the ideas of the students. To illustrate, the students have to analyze two subjects by comparing them, contrasting them, or both (Dhanarattigannon, 2022). The writing process demands not only strong language skills but also an understanding of how to connect different parts of the text effectively in a cohesive manner (Alghamdi, 2014). Since they have to present the information clearly in comparison and contrast essays, cohesive devices are, in fact, required.

Previous studies (Alghamdi, 2014; Ariyanti, 2021; Bui, 2022; Chanyoo, 2018; Hamed, 2014; Rahimi, 2011) have demonstrated a significant role of cohesive devices in the writing of EFL learners and highlighted the challenges EFL learners face with cohesive devices. The studies have investigated the use of cohesive devices both quantitatively and qualitatively, examining aspects such as the types, frequencies, and errors, and discussed suggestions for pedagogical implications of their findings. So far, only a few studies (Chanyoo, 2018; Prommas & Sinwongsuwant, 2011; Tikham, 2022) have examined Thai EFL students' use of cohesive devices in expository essays or in argumentative essays. Also, there are a limited number of studies focusing on a specific type of cohesive devices, such as contrastive markers (Sitthirak, 2013) and causal connectors (Rojanavarakul & Jaroongkhongdach, 2017). The researcher has rarely come across one specifically studying comparison and contrast (CC) transition signals in written texts. The present study thus aims to add to the existing literature on investigations into the use of CC transition signals. The learner corpus used as primary data in the study is composed of 336 comparison and contrast essays that Thai EFL undergraduate students produced. This text organization was selected due to the expectation that CC transition signals would be more prominently embedded in comparison and contrast essays. Moreover, the study further explored other areas, such as comparing the usage patterns of CC transition signals used by Thai EFL students with those identified in a corpus of English essays serving as a good resource of authentic language texts.

To learn more about the use of CC transition signals and variations of language patterns, a corpus of native English essays could provide valuable data and suggest future pedagogical implications. In previous studies (Lee, 2020; Matte & Sarmento, 2018; Prommas & Sinwongsuwat, 2011), various corpora of native English essays, such as the British Academic Written English (BAWE), the American Brown Corpus, the British LOB Corpus, and the Louvain Corpus of English Essays (LOCNESS), have been used to serve different objectives of the studies. The Corpus of Contemporary American English (COCA) is also a reliable source of data. It has been used to search words in particular contexts and to explore language patterns across genres. It is the largest freely available online corpus of English providing insights into English variation. It covers more than one billion words of texts (25+ million words each year 1990-2019) from eight genres: spoken, fiction, magazines, newspapers, academic texts, TV and movies, blogs, and web pages (Davies, 2020). Therefore, the present study used the COCA as a reference corpus to gain a better understanding of the students' use of CC transition signals in their essays. The findings could also facilitate instructors in refining their instructional methodologies for a more effective pedagogy.

2. Research Questions

The present study aims to investigate the use of a specific type of cohesive devices known as comparison and contrast transition signals (CC transition signals) in expository compositions written by second-year Thai EFL undergraduate students majoring in English at a public university in Thailand. This corpus-based study addresses the following research questions:

1. What CC transition signals are commonly used by the Thai EFL students?

2. What pattern(s) of inappropriate CC transition signal use does the Thai EFL students' writing reveal?

3. How are the common CC transition signals used by the Thai EFL students in comparison with how they are found to be used in the Corpus of Contemporary American English (COCA)?

3. Literature Review

3.1 Cohesive Devices

As introduced by Halliday & Hasan (1976), "cohesion expresses the continuity that exists between one part of the text and another" (p. 299). Cohesion in writing is influenced by a writer's assumptions of readers' knowledge, the context, and the linguistic signals in the text (Carter & McCarthy, 2006). These linguistic

109

วารสารมนุษยศาสตร์วิชาการ ปีที่ 31 ฉบับที่ 2 (กรกฎาคม-ธันวาคม 2567)
Journal of Studies in the Field of Humanities Vol.31 No.2 (July-December 2024)

signals can facilitate both writers and readers in their perception of cohesion through explicit clues that enhance the sense of coherence among ideas (Rahayu & Cahyono, 2015).

Study of the relationship between cohesion and coherence in written discourse reveals inconclusive opinions on the role of cohesive devices. Carrell (1982) pointed out that cohesion does not always guarantee coherence. Also, no significant correlation has been found between the use of cohesive devices and coherence in writing quality (Granger & Tyson, 1996). However, Halliday & Hasan (1976), Nugraheni (2015), and Tikham (2022) emphasized the importance of cohesive devices in creating coherent texts. Moreover, research by Alghamdi (2014) and Rahayu & Cahyono (2015) highlighted the crucial role of cohesive devices in writing development. Additionally, numerous studies (Alghamdi, 2014; Crewe, 1990; Granger & Tyson, 1996; Hamed, 2014; Kao & Chen, 2011; Narita, Sato, & Sugiura, 2004; Nugraheni, 2015; Prommas & Sinwongsuwat, 2011) have identified issues such as the avoidance of use of cohesive devices and their underuse, overuse and misuse among ESL and EFL students and some of these authors presented frameworks for analyzing these inappropriate use (Crewe, 1990; Kao & Chen, 2011; Nugraheni, 2015). Since the application of cohesive devices has been found to be important and challenging for ESL/ EFL learners, more investigation of how the ESL/ EFL learners use cohesive devices in writing is needed.

Various terms have been used in the literature to refer to cohesive devices. These terms include *conjunctions* (Halliday & Hasan, 1976), *logical connectors/ conjuncts* (Quirk, Greenbaum, Leech, & Svartvik, 1985), *logical connectives* (Crewe, 1990), *connectors* (Granger & Tyson, 1996), *linking adverbials* (Biber, Johansson, Leech, Conrad, & Finegan, 1999), *pragmatic markers* (Fraser, 1999), *discourse connectors* (Cowan, 2008), and *signal words/ transition signals* (Dhanarattigannon, 2022; Oshima & Hogue, 2006). Regardless of the terminology used, cohesive devices serve the same function in texts, which is to link elements and sentences in a paragraph or an essay.

The present study adopts the term *transition signals* as defined by Dhanarattigannon (2022) because it is a common term used in textbooks and it is semantically transparent among Thai EFL students.

3.2 Learner Corpora

Born in the 1960s, corpus linguistics is defined as a linguistic approach founded on the use of electronic collections of naturally occurring text. It focuses on issues like frequencies, patterns, registers, dialect analysis, etc (Granger, 1998). Within the field of corpus linguistics, learner corpora consist of authentic texts produced by non-native English learners which help make it possible to compare the distinctive interlanguage of those speakers or writers with expert usage or of other L2 writers (Flowerdew, 2013) and to develop pedagogical tools that precisely address the needs of language learners.

Over the past decades, learner corpus studies have contributed significantly to linguistic research. Two common methods used for analysis are Contrastive Interlanguage Analysis (CIA) and Computer-

aided Error Analysis (CEA). CIA involves two types of comparison: one involves comparing various non-native English varieties with native speaker English, while the other one compares non-native varieties with each other (Granger & Tyson, 1996). This methodology makes it possible to gain a deeper and better understanding of the features of learners' writing and may further improve the knowledge of interlanguage (Granger, 1998). CEA integrates error analysis (EA) research questions with computer tools (Dagneaux, Denness, & Granger, 1998). Nevertheless, it is noteworthy that human evaluation is still an important part of CEA (Kraut, 2018). That means a human rater is required to identify and classify errors. CEA involves analyzing learner errors at various linguistic levels such as word, phrase, word category, and syntactic structure in order to understand interlanguage development. These insights are valuable for pedagogical frameworks (Granger, 2008; Granger & Tyson, 1996).

It is suggested that part-of-speech (POS) tagging and error tagging projects make it possible to identify the challenges learners face and help material designers to select suitable topics for inclusion in language classes (Granger, 2008). Numerous studies (Chanyoo, 2018; Granger & Tyson, 1996; He, 2020; Kao & Chen, 2011; Wang, 2022) have explored learner corpora in Second Language Acquisition (SLA) and English Language Teaching (ELT).

To shed some light on EFL teaching and pedagogical implications, the present study conducted a learner corpus analysis of the authentic written texts produced by Thai EFL undergraduate students and mainly adopted the CEA method, as it is suitable for studying learners' interlanguage and learner needs. Following CEA methodology, the study used AntConc (4.2.4), a freeware corpus analysis toolkit developed by Laurence Anthony (2023), as a computer tool to analyze corpora of students' writing. The analysis helps in understanding the frequency of common errors among students and addressing them. Apart from using AntConc, a close examination of CC transition signals was done by the researcher and a native English instructor to identify errors that may affect text cohesiveness and readers' comprehension. Together with this, the study used the Corpus of Contemporary American English (COCA), a form of computer-aided analysis, as a reference source to find out the similarities and differences in the use patterns of CC transition signals between the Thai EFL students and native English speakers.

3.3 Previous Related Studies

This section reviews studies on cohesive devices in ESL/EFL writing. Previous research can be categorized into two main groups: studies that primarily compare the use of cohesive devices between English native speakers (NSs) and non-native speakers (NNSs), and those that focus specifically on NNSs and their use as well as misuse of cohesive devices in English writing.

As to the first group, the literature on the usage of connectors and discourse markers in English as a Foreign Language (EFL) writing gives insights into the differences between non-native speakers (NNSs) and native speakers (NSs) regarding their utilization of these linguistic devices.

Granger & Tyson (1996) conducted a corpus-based study to compare connector usage of French EFL learners and NSs. The findings indicated that the French learners overused certain types of connectors like corroborative and appositive, while underusing connectors such as *however, instead, though, yet, hence, therefore, thus* and *then*. This was possibly due to L1 transfer. Similarly, Narita, Sato, & Sugiura (2004) carried out a corpus-based study to compare logical connector usage of Japanese EFL learners and NSs. They found that the Japanese EFL learners overused logical connectors in sentence-initial position, but underused such connectors as *then*, *yet*, and *instead*, and that the influence of L1 transfer on connector usage remained uncertain.

Additionally, He (2020) conducted a corpus-based study to examine aspects of cohesion in academic writing, namely distribution of cohesive devices, cohesion density, and distance of cohesive ties. The study compared essays drawn from two corpora: TECCL corpus (L1-Chinese students) and BAWE corpus (L1-English students). The findings indicated that Chinese students had lower density of cohesion, underused lexical cohesion, and used fewer immediate and remote ties of cohesion, with greater distance between ties. This suggested that Chinese students might lack the knowledge of how to use cohesion in their academic writing.

In the Thai context, Prommas & Sinwongsuwat (2011) compared discourse connectors used in argumentative compositions produced by Thai EFL undergraduates and essays of NSs retrieved from the Louvain Corpus of Native English Essays (LOCNESS). The findings aligned with those of Granger & Tyson (1996) that the native language caused difficulties to some degree in using some connectors in essays. Another research explored logical thinking through the use of logical connectors. Rojanavarakul & Jaroongkhongdach (2017) compared the use of logical connectors in two corpora: 20 Thai and 20 international research articles. Although the findings revealed no difference in the use of logical connectors between the two groups, the study recommended raising students' awareness in using logical connectors.

Regarding the second group, the literature provides valuable insights into the challenges encountered by non-native speakers (NNSs) in using cohesive devices and discourse markers without taking NSs' performance into consideration. Interestingly, many studies centered on misuse or error analysis.

Crewe (1990) explored the illogic of logical connectives and proposed a misuse framework including non-equivalent exchange, connective overuse, and surface logicality. Similarly, Kao & Chen (2011) investigated genre influence on the use and misuse of conjunctive adverbials and extended Crewe's framework with misuse patterns like wrong relation, semantic incompletion, and distraction.

Hamed (2014) investigated conjunction usage in argumentative essays by fourth-year Libyan EFL undergraduates. The findings revealed inappropriate usage, particularly with adversative conjunctions, attributed to L1 negative transfer, overgeneralization, and lists of conjunctions in textbooks. Similarly, Nugraheni (2015) analyzed eight essays written by Indonesian ESL learners and found that the most

common type of conjunction was addition. Moreover, the findings showed five groups of inappropriate use of conjunctions, namely, unclassified, wrong mechanism, L1 interference, wrong forms, and grammatical error.

In the Thai EFL context, Chanyoo (2018) investigated cohesive devices used in the academic essays of Thai undergraduate students and writing quality. The findings revealed four types of cohesive devices the students frequently used, namely, reiteration, reference, conjunction, and ellipsis. Another study in the context of Thai learners was conducted by Tikham (2022). The study examined discourse markers in essays written by Thai EFL undergraduate students. The quantitative analysis indicated the highest frequency of inferential discourse markers, followed by contrastive and elaborative ones. The qualitative analysis revealed students' misuse of discourse markers at the sentence level.

Many studies have highlighted the challenges English learners face with cohesive devices. If errors in using cohesive devices are due to L1 interference as Granger & Tyson (1996), Prommas & Sinwongsuwat (2011), Hamed (2014), & Nugraheni (2015) seem to suggest, more studies in the Thai context are needed for Thai EFL learners. Therefore, this study aimed to conduct a learner corpus analysis of the use of CC transition signals in expository essays produced by Thai EFL undergraduate students and compare the findings to the data in the Corpus of Contemporary American English (COCA), a reference corpus, to identify similarities and differences in use patterns.

4. Research Methodology

4.1 Data Collection

This study relied on a learner corpus and the Corpus of Contemporary American English (COCA). The primary data were extracted from the learner corpus created by Jiraporn Dhanarattigannon, a writing course coordinator, (COE No. COE65/146 and Study Code: KUREC-SSR65/182).

The corpus comprised expository essays from English major sophomore students in a public university in Thailand. The essays included four organizational patterns: listing, sequence, comparison and contrast, and cause and effect. They were produced during an English writing course between 2017 and 2023. The essays were untimed and written outside of the classroom and referencing of outside sources was allowed but not required. The essays reflected authentic, real-world writing which allowed writers sufficient time to gather and put together information, as well as time to revise and polish their writing. Writing assignments with a variety of topics were multiple-paragraph essays about 400 words long. The students were all Thai EFL students whose first language was Thai. They shared similar language proficiency (CEFR level of at least B1) and cultural and educational backgrounds. Their personal information such as name and students' ID were deleted from the corpus to ensure anonymity.

A sub-corpus of Dhanarattigannon's learner corpus that consisted of 336 comparison and contrast essays with approximately 138,743 words was selected with permission for use in this study. The chosen learner corpus fits the objectives of the present study. Its advantages are that the data can be limited to a particular text organization and processed by readily available software. Table 1 presents the 19 CC transition signals selected from Dhanarattigannon (2022, p. 49) and analyzed by referring to the descriptions given by Biber, Johansson, Leech, Conrad, & Finegan (1999).

Table 1

The 19 Comparison and Contrast Transition Signals Examined in This Study

Comparison transition signals expressing similarities	Part of speech (word class) (Biber et al., 1999)	Contrast transition signals expressing differences	Part of speech (word class) (Biber et al., 1999)
1. *Like* + noun, sentence	Preposition	8. *Unlike* + noun, sentence	Preposition
2. *Similar to* + noun, sentence	Adjective	9. *In contrast to* + noun, sentence	Complex preposition (preposition + noun + preposition)
3. *Resembling* + noun, sentence	Verb	10. *While* + (subject + verb), (subject + verb)	Correlative subordinator
4. *Both* (subject) *and* (subject) + verb	Correlative coordinator	11. *Although* + (subject + verb), (subject + verb)	Correlative subordinator
5. (subject + verb); *similarly*, (subject + verb)	Linking adverbial	12. *Whereas* + (subject + verb), (subject + verb)	Correlative subordinator
6. (subject + verb). *Likewise,* (subject + verb)	Linking adverbial	13. *Though* + (subject + verb), (subject + verb)	Correlative subordinator
7. (subject + verb). *Also,* (subject + verb)	Linking adverbial	14. *Even though* + (subject + verb), (subject + verb)	Correlative subordinator
		15. (subject + verb); *however,* (subject + verb)	Linking adverbial
		16. (subject + verb). *In contrast,* (subject + verb)	Linking adverbial

Comparison transition signals expressing similarities	Part of speech (word class) (Biber et al., 1999)	Contrast transition signals expressing differences	Part of speech (word class) (Biber et al., 1999)
		17. (subject + verb). *Nevertheless*, (subject + verb)	Linking adverbial
		18. (subject + verb). *On the other hand*, (subject + verb)	Linking adverbial
		19. (subject + verb). *On the contrary*, (subject + verb)	Linking adverbial

As shown in Table 1, the 19 CC transition signals belong to various categories of words and phrases: prepositions, adjectives, verbs, correlative coordinators, correlative subordinators, and linking adverbials. Some transition signals have two or more different uses. To ensure validity and accuracy, only transition signals indicating comparison and contrast relationships were included in the analysis. For example, only the word *like,* which is used as a transition signal expressing similarities, was selected whereas the word *like*, which is used as a verb or which is also used to provide an example, was excluded. The CC transition signals in Table 1 occur in various positions; some may be found at sentence-initial, medial, or final position. Since different positions of these CC transition signals express different degrees of emphasis, the present study took positioning into consideration.

4.2 Data Analysis

This study involved three main steps of data analysis. The first step was to tally the frequency of the 19 comparison and contrast (CC) transition signals via AntConc (4.2.4), a concordance program developed by Laurence Anthony (2023). This step also aimed to examine grammatical patterns of CC transition signals evident in the concordance lines.

In the second step, the researcher and a native English instructor carefully identified and categorized patterns of inappropriate usage in the students' writing, including errors and uncommon usage that may affect text cohesiveness and readers' comprehension. A framework for categorizing inappropriate usage was developed based on the misuse frameworks of Crewe (1990) and Kao & Chen (2011). This framework encompassed five categories of inappropriate use: 1) wrong relation, 2) non-equivalent exchange, 3) unnecessary use, 4) omission, and 5) wrong form.

115

วารสารมนุษยศาสตร์วิชาการ ปีที่ 31 ฉบับที่ 2 (กรกฎาคม-ธันวาคม 2567)
Journal of Studies in the Field of Humanities Vol.31 No.2 (July-December 2024)

In the final step, the common CC transition signals used by EFL students were compared to their usage in the reference corpus, the Corpus of Contemporary American English (COCA), developed by Davies (2020), across six written genres: Academia, Magazines, Fiction, Blogs, Webs, and News. These six written genres from the COCA were selected due to characteristics that were similar to the learner corpus: a variety of the topics and authentic language.

The COCA was not used as the benchmark, but as a reference point to shed light on similarities and differences in the use of CC transition signals between Thai EFL students and native English speakers. Leveraging the COCA to compare with students' essays could enrich language learning and teaching by not only providing a comprehensive view of language use and patterns but also helping students develop proficiency. In this present study, the first 200 concordance lines generated in the COCA for each commonly used CC transition signals were examined as suggested by Sukman & Namtachan (2019) and Wongrat (2018) to gain more reliable insights into their grammatical patterns.

5. Findings and Discussions

The report on the findings of this study is divided into three major parts, each addressing a specific research question.

5.1 Research Question 1: What CC transition signals are commonly used by the Thai EFL students?

To answer the first research question, AntConc (4.2.4) was utilized to count the frequency of 19 CC transition signals in students' essays and demonstrate their grammatical patterns in the concordance lines. The selected sub-corpus had about 138,743 words. Frequencies (raw frequencies and per 100,000 words) were calculated, as proposed by Granger & Tyson (1996). Table 2 presents the analysis of the frequency and the ratio of occurrence per 100,000 words of each CC transition signal. The ratio of occurrence in this study could be useful for future corpus-based analyses or comparative studies. For example, with the ratio of occurrence per 100K words, it would be possible to compare the data below with the data available in a larger corpus like the Corpus of Contemporary American English (COCA).

116

วารสารมนุษยศาสตร์วิชาการ ปีที่ 31 ฉบับที่ 2 (กรกฎาคม-ธันวาคม 2567)
Journal of Studies in the Field of Humanities Vol.31 No.2 (July-December 2024)

Table 2

The Frequency of CC Transition Signals in Students' Writing and the Ratio of Occurrence per 100,000 Words

Comparison transition signals expressing similarities	Frequency	Ratio of occurrence per 100K words	Contrast transition signals expressing differences	Frequency	Ratio of occurrence per 100K words
Like	31	22.34	Unlike	77	55.50
Similar to	4	2.88	In contrast to	6	4.32
resembling	0	0	**While**	**173**	**124.69**
Both … and …	48	34.60	Although	66	47.57
Similarly	1	0.72	Whereas	34	24.51
Likewise	6	4.32	Though	17	12.25
Also	**359**	**258.75**	Even though	71	51.17
			However	**273**	**196.77**
			In contrast	**147**	**105.95**
			Nevertheless	**30**	**21.62**
			On the other hand	**197**	**141.99**
			On the contrary	62	44.69

Note. N = 1,602 occurrences in total

The findings (Table 2) revealed that the total number of CC transition signals in students' writing was 1,602. Remarkably, the most commonly used CC transition signals were *also*, *however*, *on the other hand*, *while*, and *in contrast*, respectively. For instance, *also* emerged as the most frequent CC transition signal, appearing 359 times (258.75 per 100 K words) in the students' writing.

The students were found to have used contrast transition signals quite frequently, with *however* occurring 237 times (196.77 per 100K words). It is noteworthy that *however* not only ranked second among the five most frequently used CC transition signals but also emerged as the most preferred in contrastive or adversative relations. This finding aligns with previous studies by Biber et al. (1999), Eun (2016, as cited in Wang, 2022), and Park (2013a, as cited in Wang, 2022), which also identified *however* as the preferred choice in such relations.

The findings showed that students employed various transition signals in their writing. In general, the ratio of occurrence of each transition signal was low. Only a few of them were frequently used, with five CC transition signals (*also*, *however*, *on the other hand*, *while*, and *in contrast*) appearing more than 100 times, as highlighted in Table 2. These findings support previous research, suggesting that ESL/EFL students tend to heavily rely on a limited set of transition signals to establish cohesion in their writing (Crewe, 1990; Wang, 2022). According to Ellis (2012, as cited in Nugraheni, 2015), positive transfer,

117

วารสารมนุษยศาสตร์วิชาการ ปีที่ 31 ฉบับที่ 2 (กรกฎาคม-ธันวาคม 2567)
Journal of Studies in the Field of Humanities Vol.31 No.2 (July-December 2024)

occurs when students use familiar forms from their first language (L1) in their second language (L2). Linking adverbials, known as parenthetical lexical elements and used to connect ideas, abound in the Thai language, so it is not surprising seeing transition signals (lexical devices) such as *also* and *however* being used with high frequency by Thais.

Overall, the frequencies of transition signals expressing contrast were higher than those expressing similarity. This demonstrated a preference among students in this study for utilizing contrast transition signals over comparison ones in their comparison and contrast essays. Even though all of the writing samples are of the same genre and text organization, it is undeniable that differences in essay topics may, to some extent, affect the ideas expressed in the essays as well as the selection of CC transition signals. It is noticeable that the characteristics of the topic the students chose led to contrast, so students probably tried to organize the information in a contrastive manner and showed the need to clarify the differences on certain subjects.

Surprisingly, the analysis revealed that almost all of the 19 CC transition signals were used by the students, the one exception being *resembling*. It is possible that Thai EFL students were unfamiliar with it as this word is rarely included in textbooks and is derived from a verb. The transformation of the grammatical form from that of a verb to a participial phrase requires grammatical competency and this is challenging for the students. Also, the position of this transition signal was not the position these students preferred to use.

5.2 Research Question 2: What pattern(s) of inappropriate CC transition signal use does the Thai EFL students' writing reveal?

To answer the second research question, pertinent findings regarding the inappropriate use of CC transition signals among Thai students are discussed as follows.

Table 3

Five Groups of Inappropriate Use of CC Transition Signals in Students' Writing

Unnecessary use		Wrong form/ format		Non-equivalent exchange		Omission		Wrong relation	
Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
69	36.13	64	33.51	29	15.18	18	9.42	11	5.76

Note. N = 191 occurrences in total

The analysis revealed that there were 191 inappropriate uses of CC transition signals out of a total of 1,602 instances. This equates to an error occurring per approximately every eight uses of CC transition signals. Among these errors, unnecessary use accounted for the highest percentage at 36.13%, followed by wrong form, non-equivalent exchange, omission, and wrong relation. To gain better insight into authentic learner language, examples of these errors are provided and discussed below.

1) Unnecessary Use

Unnecessary use refers to the use of a transition signal where it is not required or is redundant. This incorporated similar concepts to the misuse patterns (overuse, surface logicality, and distraction) proposed by Kao & Chen (2011). Unnecessary use emerged as the most prevalent error among all the identified patterns.

Example 1: *Running is a popular exercise for people who want to lose weight, for it can burn calories more than other types of exercise.* **However,** *there are running outside and running on a treadmill.*

Example 2: *This is because it mostly has only Disney movies, and Netflix always brings in movies or series with great engagement at that time which can help persuade new customers to use the app.* **But on the contrary,** *nearly all Disney movies and cartoon characters … so forth.*

Example 3: **Although** *the size is small and there are not many kinds of flavors like Korean instant noodles,* **but** *I like the taste of Thai instant noodles more.*

Unnecessary use occurs, as observed in Example 1, where *however* is employed without a contrasting relationship between the sentences. Interestingly, the unnecessary use of *however* was found in 33 out of 69 occurrences. Similar to Rahimi's (2011) study, the findings revealed that it is still challenging for the students to use CC transition signals appropriately despite the high frequency of their use. Examples 2 and 3 show redundant use, involving the unnecessary duplication of transition signals within a single sentence. Example 2 demonstrates the redundancy with the use of *but* and *on the contrary*, which is more typical of casual conversation than formal writing and sometimes creates sentences that are "stylistically very undesirable" (Quirk et al., 1985, p. 643). Similarly, Example 3 exhibits this error with the unnecessary repetition of *but* after *although* to convey contrast. These errors also mirror the influence of L1.

Previous studies (Prommas & Sinwongsuwat, 2011; Tikham, 2022) supported the notion that students' perceptions and L1 interference contribute to the unnecessary or redundant use of transition signals in English writing. The student may wrongly believe that sentences require transition signals as per textbooks or translate L1 contrast transition signals directly into English. The students combined two transition signals in a single category (e.g. *but* and *on the contrary* and *although* and *but*) as such double markers are often used in the Thai language.

2) Wrong Form/ Format

Wrong form refers to some cases where wrong forms of transition signals are used or the misuse of transition signals is related to ungrammatical use or sentence structure.

Example 4: *You will lose thousands to all of them. Moreover, makeup brands often have some promotions such as discounts or free gift which you might end up losing more money if you don't be careful with your spending.* **In the contrary,** *if you don't use makeup, you will save tons of money.*

Example 5: *The maintenance fee of a house is approximately 15-200 baht per square meter, but if it's not a housing estate, you don't need to pay for this expense.* **While** *the condo will be around 30-170 baht per square meter. Determinants depend on each project. The more space and facilities they provide, the higher the price you have to pay.*

L1 interference (translation from Thai to English) could be a possible cause of the wrong form of CC transition signals as seen in Example 4 where *in* is used instead of *on.* Also, it is possible that the preposition is problematic for Thai students. Another problem is the use of correlative subordinators whose position is fixed at the clause boundary (Biber et al., 1999). In Example 5, *while* is used at the sentence-initial position to express a contrast with the previous sentence. The inappropriate use occurred because the student might confuse subordinators with linking adverbials. In other words, the student may have misunderstood that *while* is a parenthetical element in the sentence structure, so it is used as a sentence adverbial, turning a grammatical sentence into a fragment.

3) Non-equivalent Exchange

Non-equivalent exchange refers to the situation where transition signals are used for conveying the same textual relation in an interchangeable manner when they are not (Crewe, 1990; Kao & Chen, 2011), as seen in Examples 6 and 7.

Example 6: *Chinese grammar organizes words in sentences similarly to Thai grammar. Also, there's no verb conjugation in Chinese, which means that you don't have to consider the verb based on time or subject.* **However,** *because Korean uses verb conjugation, it's completely different.*

Example 7: *Furthermore, the survey shows that tablets can increase student motivation to learn new things and It can also conserve our environment by producing less paper.* **On the other hand,** *tablets are expensive and more likely to be lost or stolen.*

Linking adverbials such as *however, on the contrary,* and *on the other hand* are under the same functional category; however, they are non-equivalent. The students may assume that they are synonymous and can be used interchangeably. According to Longman Dictionary of Contemporary English Online (Pearson, n.d.), *however* is used to introduce a surprising aspect or a problem, so the more appropriate transition signal in Example 6 is *on the contrary,* which is used to directly contradict the previous sentence. *On the other hand* is used to introduce another aspect, without implying a contrast. However, in

120

วารสารมนุษยศาสตร์วิชาการ ปีที่ 31 ฉบับที่ 2 (กรกฎาคม-ธันวาคม 2567)
Journal of Studies in the Field of Humanities Vol.31 No.2 (July-December 2024)

Example 7, the student compared two contrastive aspects of the same subject (tablets). To introduce negative aspects of the tablets, the more appropriate transition signal is *however*.

4) Omission

Omitting a needed transition signal is another problem found in the students' writing, causing difficulty for the readers.

Example 8: *In Thai version, the competitors do not sing just Thai songs but also foreign songs …Some of the competitors can sign English songs in Thai style amazingly. In Dutch version, most of competitors sign just English songs.*

In Example 8, the whole passage would have been more coherent and also easier for readers to understand if a transition signal linking two contrastive ideas such as in contrast had been added before the last sentence. In contrast is used to present a difference between situations that are being compared (Pearson, n.d.)

5) Wrong Relation

Wrong relation is a problem where the relation between sentences and the relation that the transition signal represents is incorrect (Kao & Chen, 2011).

Example 9: *Also, going on a guided tour is more expensive but we only pay once because everything such as traveling expenses, accommodation costs or even some meals is already included in the package. In addition, because the cost is fixed, you can estimate your spending for that trip in advance. There are only a few extra costs, such as souvenirs.* **Though**, *taking a tour is better in terms of safety because the tour guides will assist if any problem occurs throughout the trip because the travel insurance is already included in the package.*

Example 9 illustrates an attempt to present similarity or difference between two subjects. However, the student misinterpreted the relationship and misused the transition signal. The last sentence is additional information supporting the previous sentences. The appropriate transition signal should express additive relation instead of contrastive one. A transition signal such as *moreover* or *in addition* is suggested.

The CEA method provides empirical data on interlanguage of the students indicating that there are some areas which they need to develop to gain higher proficiency in making their essays more logically connected. To conclude, possible reasons for the inappropriate use of CC transition signals could be pedagogical instructions (Crewe, 1990; Granger & Tyson, 1996), semantic understanding (Granger & Tyson, 1996), and L1 transfer (Bui, 2022; Granger & Tyson, 1996; Prommas & Sinwongsuwat, 2011). In addition, the findings aligned with those of previous studies (Prommas & Sinwongsuwat, 2011; Sittirak, 2013) that the inappropriate use of CC transition signals affects both semantic and syntactic aspects and that it is challenging for Thai EFL students to distinguish among various transition signals in writing tasks.

5.3 Research Question 3: **How are the common CC transition signals used by the EFL students in comparison to how they are found to be used in the Corpus of Contemporary American English (COCA)?**

To answer the third research question, a thorough qualitative analysis of the five most prevalent CC transition signals used by the Thai EFL students- *also*, *however*, *on the other hand*, *while*, and *in contrast*- was undertaken within the Corpus of Contemporary American English (COCA), a reference corpus, to observe their usage by native English speakers. These five common CC transition signals were chosen for deeper examination because each of them appeared more than 100 times.

The COCA 200 concordance lines of each frequent CC transition signal were scrutinized with the purpose of providing insightful information in terms of grammatical patterns. The data from the COCA yielded interesting results. Table 4 shows examples of similar grammatical patterns of the five most common CC transition signals extracted from the learner corpus and the COCA.

Table 4

The Similar Grammatical Patterns of Five Common CC Transition Signals and Examples of Authentic Texts from the Learner Corpus and the COCA

CC transition signals	Grammatical patterns from the learner corpus and examples	Grammatical patterns from the COCA and examples
Also	Subject + verb. *Also*, subject + verb. "…private cars, this helps in the reduction of carbon emissions. Also, a lot of buses use environmentally friendly electricity, …"	Subject + verb. *Also*, subject + verb. " … been shown to be significantly decreased in glioma, compared to other brain cancers. Also, the serum levels of the same mRNA have been linked to worse prognosis…"
However	Subject + verb. Subject, *however*, verb. "…anything referring to both the past and the future. Animals, however, can only communicate on what is in front of …"	Subject + verb. Subject, *however*, verb. "…pipeline, but were accelerated to meet the Olympic timetable. Other observers, however, say the true amount of this second budget was larger…"
On the other hand	Subject + verb. *On the other hand*, subject + verb. "…skills which this type of person can do very well. On the other hand, an introverted personality is suitable for…"	Subject + verb. *On the other hand*, subject + verb. "I'm comfortable with words. On the other hand, numbers, values, dimensions, and formulars, etc. scare me!"

CC transition signals	Grammatical patterns from the learner corpus and examples	Grammatical patterns from the COCA and examples
while	*While* + subject + verb, subject + verb. " While buses create more pollution, an electric train creates less because it is powered by electricity, …"	*While* + subject + verb, subject + verb. " While both approaches are evident in existing academic integrity policy research, there is often no…"
In contrast	Subject + verb. *In contrast*, subject + verb. "… same since your books are already stored on your devices. In contrast, you cannot carry the printed books as much …"	Subject + verb. *In contrast*, subject + verb. "… a particular moisture content but shows higher rate of change with moisture content. In contrast, the red mud stabilized with 25% GGBS shows higher SDI value with relatively low…"

A close examination revealed that some grammatical patterns of the top five CC transition signals were used similarly by both groups, as seen in Table 4. However, differences were observed, especially in the positioning of *however, on the other hand*, and *in contrast*. Based on the analysis, native speakers exhibited variation in grammatical patterns. Some examples of grammatical patterns from the COCA which were absent in the Thai EFL students' essays can be seen in Table 5.

Table 5

The Grammatical Patterns of the CC Transition Signals (however, on the other hand, and *in contrast) and Examples of Authentic Texts from the COCA*

CC transition Signals	Grammatical patterns	Examples from the COCA
However	Subject + verb. Subject + verb, *however*, …	" … parcel- by- parcel plan for linked pedestrian circulation spaces. The private market did not oblige, however, by developing each of the parcels necessary to provide the desired pedestrian network."
	Subject + verb. Adverb, *however*, subject + verb.	"…the plan documents to grant the required discretion to the plan administrators. Importantly, however, the deferential review in trust law is premised on decision making by disinterested fiduciaries…"
	Subject + verb. Subject + verb + …, *however*.	"…1987, to $3.3 billion. The computers weren't used to replace labor, however."
On the other hand	Subject + verb. Prepositional phrase, *on the other hand*, subject + verb.	" … urban areas. In middle- income countries such as China and Brazil, on the other hand, the opposite dynamic has been found to be true."

CC transition Signals	Grammatical patterns	Examples from the COCA
	Subject + verb. If, *on the other hand*, subject + verb.	"…and therefore included as "lobbying activity." If, on the other hand, a person reports back to the relevant committee or officer regarding the …"
In contrast	Subject + verb; *in contrast*, subject + verb.	"… a sign that Bungin had become comfortable with Barrallier and his men; in contrast, Wallarra had fled."

The sample grammatical patterns in Table 5 are consistent with the mobile nature of adverbials which can occupy various positions within the clause (Biber et al., 1999). Many linking adverbials can appear at sentence-initial, medial, and final positions. However, in the Thai EFL students' writing, some linking adverbials like *however*, *on the other hand*, and *in contrast*, were predominantly used in sentence-initial and medial positions. This is in line with the findings of previous studies (Field & Yip, 1992, as cited in Lee, 2020; Narita, Sato, & Sugiura, 2004; Ong, 2011, as cited in He, 2020; Yoon & Yoo, 2011, as cited in Wang, 2022) that EFL students revealed excessive sentence-initial usage of cohesive devices. Furthermore, no instances of these adverbials in final position were found in the Thai EFL students' writing. It is possible that this is an L1 influence, as in the Thai language, linking adverbials are not used in such a manner. Also, the findings imply that Thai EFL students tend to adhere closely to the basic sentence structure prescribed in their textbooks. This could lead to a sense of familiarity and reluctance to alter the positioning of linking adverbials.

In conclusion, Thai EFL students were aware of the necessity of CC transition signals, yet some struggled with their appropriate use. Also, comparison between the learner corpus and the COCA, a reference corpus, revealed both similarities and differences in grammatical patterns. The analyses indicated a need for more guidance by instructors and practice by students.

6. Pedagogical Implications for English Writing

Effective use of transition signals is crucial for coherent texts. The findings of this study underscore the significance of scaffolding and opportunities in instruction.

To address inappropriate usage, differences between correlative subordinators and linking adverbials as well as those in the same grammatical category and their non-equivalent nature should be clarified. Additional exercises such as sentence combination and cloze activities are recommended. Instructors can instruct students to choose transition signals with similar meanings and same grammatical category, such as *however, on the other hand*, and *on the contrary*, to fill in the gaps. Moreover, paraphrasing the transition signals can enhance students' precision in making the links (Crewe, 1990).

The findings indicate the importance of introducing students to variations in patterns via authentic texts. Integrating data-driven learning activities into instruction or using a corpus like the Corpus of Contemporary American English (COCA) could provide students with real-world examples and a standard framework for academic writing. The suggested steps are as follows:

Step 1: Introduce the COCA to students and provide training on its use via https://www.english-corpora.org/coca/.

Step 2: Familiarize students with the COCA's SEARCH function by assigning them to search some problematic CC transition signals like *whereas* and *in contrast* and present their findings to the class in order to understand different placements and structural patterns.

Step 3: Provide exercises or reading activities using texts from the COCA. However, instructors should consider students' language proficiency levels to ensure the chosen texts are meaningful as Krashen (1981) said, "comprehension normally precedes production" (p. 108).

By following these suggested steps, instructors can enhance students' comprehension of CC transition signals and foster meaningful language learning experiences.

7. Limitations and Recommendations for Further Research

This research was confined to the specific context as it focused only on the use of comparison and contrast (CC) transition signals by Thai EFL undergraduate students majoring in English. Future research could explore other types of transition signals to gain more insights which may enable the instructors to indicate what else needs to be done in order to improve academic skills among Thai EFL students or to improve material design with an additional focus on transition signals. Another limitation is the narrow timeframe of data collection due to the students being enrolled in the course for only one semester. A longitudinal study would allow for the evaluation of student progress following intervention with the suggested exercises.

References

Alghamdi, E. A. (2014). Discourse markers in ESL personal narrative and argumentative papers: A qualitative and quantitative analysis. *International Journal of Humanities and Social Science, 4*(4), 294-305.

Anthony, L. (2023). AntConc (Version 4.2.4) [Computer Software]. Tokyo, Japan: Waseda University. Retrieved from https://www.laurenceanthony.net/software.

Ariyanti, A. (2021). EFL students' use of transition signals in essay writing.
     Indonesian Journal of EFL and Linguistics, 6(1), 285-294.

Biber, D., Johansson, S., Leech, G., Conrad, S., & Finegan, E. (1999). *Longman grammar of spoken*
     and written English. Essex, England: Pearson Education Limited.

Boonyarattanasoontorn, P. (2017). An investigation of Thai students' English language writing difficulties
     and their use of writing strategies. *Journal of Advanced Research in Social Sciences and Humanities,*
     2(2), 111-118.

Bui, H. P. (2022). Vietnamese EFL students' use and misconceptions of cohesive devices in writing.
     SAGE Open, 1-12.

Carrell, P. L. (1982). Cohesion is not coherence. *TESOL Quarterly, 16*(4), 479-488.

Carter, R., & McCarthy, M. (2006). *Cambridge grammar of English*. Cambridge, England:
     Cambridge University Press.

Chanyoo, N. (2018). Cohesive devices and academic writing quality of Thai undergraduate students.
     Journal of Language Teaching and Research, 9(5), 994-1001.

Cowan, R. (2008). *The teacher's grammar of English*. New York, NY: Cambridge University Press.

Crewe, W. J. (1990). The illogic of logical connectives. *ELT Journal, 44*(4), 316-325.

Dagneaux, E., Denness, S., & Granger, S. (1998). Computer-aided error analysis. *System, 26*(2), 163-174.

Davies, M. (2020). *The COCA corpus. Corpus of contemporary American English*. Retrieved from
     https://www.english-corpora.org/coca.

Dhanarattigannon, J. (2022). *English writing*. Bangkok, Thailand: Danex Intercorporation.

Drew, C. (2023). *Difference between expository & argumentative essays*. Retrieved from
     https://helpfulprofessor.com/text-types.

Farneste, M. (2012). Usage of comparison/ contrast pattern in undergraduate academic essays.
     Baltic Journal of English Language, Literature and Culture, 2, 42-53.

Flowerdew, J. (2013). *Discourse in English language education*. New York: Routledge.

Fraser, B. (1999). What are discourse markers?. *Journal of Pragmatics, 31*(7), 931-952.

Granger, S. (1998). *Learner English on computer*. London, England: Longman.

Granger, S. (2008). Learner corpora. In A. Lüdeling & M. Kytö (Eds.), *Corpus Linguistics:*
     An International Handbook. Volume 1 (pp. 259-275). Berlin & New York: Walter de Gruyter.

Granger, S., & Tyson, S. (1996). Connector usage in the English essay writing of native and non-native EFL
     speakers of English. *World Englishes, 15*(1), 17-27.

Halliday, M. A. K., & Hasan, R. (1976). *Cohesion in English*. London, England: Longman.

Hamed, M. (2014). Conjunctions in argumentative writing of Libyan tertiary students. *English Language Teaching,*
     7(3), 108-120.

Hammann, L. A., & Stevens, R. J. (2003). Instructional approaches to improving students' writing of compare-
     contrast essays: An experimental study. *Journal of Literacy Research, 35*(2), 731-756.

He, Z. (2020). Cohesion in academic writing: A comparison of essays in English written by L1 and L2 university
     students. *Theory and Practice in Language Studies, 10*(7), 761-770.

Kao, T. Y., & Chen, L. M. (2011). *Diagnosing discoursal organization in learner via conjunctive adverbials.*
     ROCLING papers, 310-322.

126

วารสารมนุษยศาสตร์วิชาการ ปีที่ 31 ฉบับที่ 2 (กรกฎาคม-ธันวาคม 2567)
Journal of Studies in the Field of Humanities Vol.31 No.2 (July-December 2024)

Krashen, S. D. (1981). *Second language acquisition and second language learning*. Oxford, England:
    Pergamon Press Inc.

Kraut, S. (2018). *Two steps forward, one step back: A computer-aided error analysis of grammar errors in EAP
    writing* (Master's thesis). St. Cloud State University, United States.

Lee, K. (2020). Chinese ESL writers' use of English contrastive markers. *English Language Teaching, 32*(4), 89-110.

Matte, M. L., & Sarmento, S. (2018). A corpus-based study of connectors in student academic writing.
    English for Specific Purposes World, 55(20), 1-21.

Narita, M., Sato, C., & Sugiura, M. (2004). Connector usage in the English essay writing of Japanese EFL
    learners*. LREC, 27,* 1171-1174.

Nugraheni, R. (2015). Cohesive devices in learners' writing. *LLT Journal, 18*(1), 51-62.

Oshima, A., & Hogue, A. (2006). *Writing academic English: Level 4*. (4th ed.). New York: Longman.

Pearson. (n.d.). *Longman dictionary of contemporary English Online*. Retrieved from https://www.ldoceonline.com.

Prommas, P., & Sinwongsuwat, K. (2011, April). *A comparative study of discourse connectors used
    in argumentative compositions produced by Thai EFL learners and English-native speakers.*
    Paper presented at the 3rd International Conference on Humanities and Social Sciences,
    Prince of Songkla University, Thailand.

Quirk, R., Greenbaum, S., Leech, G., & Svartvik, J. (1985). *A comprehensive grammar of the English language.*
    London, England: Longman.

Rahayu, T., & Cahyono, B. Y. (2015). Discourse markers in expository essays written by Indonesian students of
    EFL. *International Journal of Language and Linguistics, 2*(2), 21-29.

Rahimi, M. (2011). Discourse markers in argumentative and expository writing of Iranian EFL learners.
    World Journal of English Language, 1(2), 68-78.

Rojanavarakul, T., & Jaroongkhongdach, W. (2017). Exploring logical thinking through the use of logical
    connectors in Thai and international research articles. *Online Proceedings of the International
    Conference: DRAL 3/19th ESEA 2017*, 328-337.

Sitthirak, C. (2013). A comparison between Thai university students and English speakers using contrastive
    discourse markers. *Foreign Language Teaching and Learning, 2*(1), 875-886.

Sukman, K., & Namtachan, P. (2019). A corpus-based analysis of two English synonymous nouns: Alternative
    and option*. Social Science Research Network*. Retrieved from https://ssrn.com/abstract=3521891.

Tikham, S. (2022). Analysis of discourse markers in Thai EFL students' essay writing:
    A case study of a university in Northern Thailand. *Rajapark Journal, 16*(46), 50-56.

Wang, Y. (2022). Linking adverbials in argumentative essays of advanced EFL learners:
    A corpus-assisted analysis. *Korean Journal of English Language and Linguistics, 22*, 396-417.

Wongrat, K. (2018). *A corpus-based analysis of English synonymous verbs: Predict and forecast*
    (Independent study paper). Thammasat University, Patumthani.