

The Efficacy of Explicit Instruction of Discourse Connectives on Chinese EFL Learners’
Argumentative Writing Performance Across Different Writing Proficiency Levels

by

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M.A., Guizhou University, 2007

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We acknowledge and respect the Ləkʷəŋən (Songhees and Xʷsepsəm/
Esquimalt) Peoples on whose territory the university stands, and the Ləkʷəŋən
and W̱SÁNEĆ Peoples whose historical relationships with the land continue to
this day.

Supervisory Committee

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Abstract

Argumentative writing involves cognitively sophisticated thinking and reasoning skills (Taylor et al., 2019). Using connectives to indicate the logical reasoning process is one of the challenging aspects of learning writing for English learners (Snow & Uccelli, 2009). Discourse connectives (DCs) are important for discourse coherence and “such coherence is often marked by using discourse connectives” (Zufferey et al., 2015, p. 390). Regarding the use of DCs in IELTS argumentative writing, many Chinese undergraduate English learners in China with different proficiency levels do not perform well (Yao, 2014). What is more, according to the researcher’s teaching experience in English writing classes, many Chinese students could not properly employ DCs in their argumentative writing. Therefore, due to these reasons, more empirical studies are needed in order to investigate the effects of explicit instruction of DCs on Chinese undergraduate EFL learners’ argumentative writing performance across different writing proficiency levels.

Using qualitative and quantitative research methods, this study investigated the efficacy of explicit instruction about DCs involving 96 undergraduate Chinese EFL learners across different proficiency levels (i.e., elementary proficiency level, $n = 30$; intermediate proficiency level, $n = 32$; upper intermediate proficiency level, $n = 34$) in their English argumentative writings. Conducted through a four-week treatment, the study used a pre- and post-test design to measure participants’ use of DCs and their writing abilities. Further, participants’ post-treatment survey provided qualitative data about participants’ use of DCs during the treatment. Through both qualitative data (i.e., content analysis) and quantitative (i.e., descriptive statistics, paired-sample t -test, and Pearson’s correlation), the results showed that the participants had stronger awareness and use of DCs and writing performance after the treatment. In the total frequency and appropriateness of using DCs, there were statistically significant differences between pre- and post-treatment writing tests across Elementary

Group (EG), Intermediate Group (IG), and Upper Intermediate Group (UIG). As for the frequency and appropriateness of using three types of DCs, there were statistically significant differences on Type I DCs (e.g., *in addition*, *finally*, and *similarly*) and Type III DCs (e.g., *because* and *to conclude*) in EG, IG, and UIG. In Type II DCs (e.g., *nevertheless*, *although*, *or*, *in fact*, and *on the other hand*), there was a statistically significant difference in IG. However, there were no statistically significant differences in EG and UIG. As to their writing performance, participants in EG and IG made significant improvements but not in UIG after the treatment. Correlational analyses showed that there were significant correlations between the total appropriate use of DCs and participants' writing scores in EG and UIG, but not in IG after the treatment. The analysis of the qualitative data revealed that explicit instruction of DCs could facilitate EG, IG, and UIG participants to overcome their challenges on using DCs in argumentative writing.

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List of Abbreviations

AC	Appropriate Use of Connectives
ANCOVA	Analysis of Covariance
ANOVA	Analysis of Variance
CaMLA	Cambridge-Michigan Language Assessment
CEs	Contextual Effects
CEFR	The Common European Framework of References for Languages
CG	Control Group
COCA	Corpus of Contemporary American English
CR	Consciousness Raising
DC	Discourse Connective
DM	Discourse Marker
EAP	English for Academic Purposes
ECCE	Examination for the Certificate of Competency in English
EFL	English as a Foreign Language
EG	Elementary Group/Experimental Group/Explicit Group
EI	Explicit Instruction
EIG	Explicit Instruction Group
ELT	Explicit Language Teaching
ESL	English as a Second Language
FL	Foreign Language
FonF	Focus-on-Form
FonFs	Focus-on-Forms
FonM	Focus-on-Meaning
FS	Formulaic Sequence
GPA	Grade Point Average
GT	General Training
ICLE	International Corpus of Learner English
ICNALE	International Corpus Network of Asian Learners of English
IELTS	International English Language Testing System
II	Implicit Instruction
IIG	Implicit Instruction Group
IG	Intermediate Group/Implicit Group
L1	First Language
L2	Second Language
LOCNESS	The Louvain Corpus of Native English Essays
M	Miscellaneous
MDM	Metadiscourse Marker
MICUSP	Michigan Corpus of Upper-Level Student Papers
NNES	Non-native English Speakers
NES	Native English Speakers
PM	Pragmatic Marker
QR	Quick Response
RC	Redundant Connective
SC	Semantic Category
SPSS	Statistical Package for Social Sciences
TEM-4	Test for English Majors-Band 4
UIG	Upper Intermediate Group
WC	Wrong Choice of Connective

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Dedication

To a ripple in the Yangtze River

Chapter 1: Introduction

This dissertation investigates the efficacy of explicit instruction about discourse connectives (DCs) on Chinese learners of English as a foreign language (EFL) across different proficiency levels in their argumentative writing. The first chapter introduces the current study. Section 1.1 provides research background. Section 1.2 puts forward the research objectives and presents their significance. The final section is the outline of this dissertation.

1.1 Research Background

In China's universities, writing in EFL has become more important owing to the fact that many EFL learners have to take English tests or may send applications for further studies to English-speaking countries, among other reasons. Every year, in order to gain access to universities abroad, an increasing number of English learners in universities take part in the International English Language Testing System (IELTS), which "is widely recognized as a reliable means of assessing the language ability of candidates who need to study or work where English is the language of communication" (IELTS General Training, 2019). According to the IELTS General Training (GT) Module, apart from the same listening, speaking, and reading tests, the candidates are required to take two writing tests (a letter and an argumentation). The argumentation task consists of complex logical relationships in the textual level of discourse. It is often crucial to use some connectors to indicate the logical reasoning process and make English argumentation coherent. Zhu (2013) proposes that "coherence and clarity are the important requirements for measuring the quality of

compositions” (p. 9), and DCs are of significance for discourse coherence. Furthermore, Zufferey et al. (2015) state that “in a text or discourse, sentences are linked together coherently, and such coherence is often marked by the use of discourse connectives” (p. 390). DCs are linguistic devices that are used to link clauses and sentences with different logical meanings in the English language. Research has shown that many Chinese undergraduate English learners in China at different proficiency levels do not perform well on the use of DCs in IELTS argumentative writing (Yao, 2014). Moreover, according to my observation of my English writing classes, I also find that many Chinese English major undergraduates could not properly use DCs in their argumentative writing. For these reasons, it is worthwhile to conduct research on the use of DCs of argumentative writing in the context with Chinese undergraduate EFL learners in China.

Recently, there have been a growing number of language practitioners who have investigated DCs in English writing (e.g., AlHassan & Wood, 2015; Hu & Li, 2015; Li & Schmitt, 2009; Linstromberg et al., 2016). Having analyzed the results of these studies, I have found that considerable existing studies have been concerned about the examining of English learners’ usage and acquisition of DCs in English writing. However, to my knowledge, there is scant empirical research that has investigated how explicit instruction of DCs may affect Chinese EFL learners’ use of DCs in argumentative writing across different proficiency levels. Given this consideration, more empirical research on the role that explicit instruction may have on Chinese EFL learners’ ability with using DCs in argumentative writing is needed to fill this research gap.

1.2 Research Objectives and Significance of the Study

This study is designed to inform researchers or practitioners by investigating how to improve Chinese EFL learners' use of DCs and their overall writing performance through explicit instruction. First, this study aims to specify the challenges, based on the responses gathered from an individual profile questionnaire, that Chinese EFL learners at different proficiency levels may face when they use DCs in English argumentative writing. Second, I examine learners' use of specific DCs by comparing their overall writing performance in pre- and post-treatment writing tests. This study also addresses the relationship between the learners' use of DCs and their overall argumentative writing performance after receiving explicit instruction over four weeks. Finally, this study examines the participants' perceptions of how the explicit instruction of DCs helps them address their argumentative writing challenges, based on post-treatment surveys.

The findings of this research aim to 1) help learners across different writing proficiency levels use DCs more appropriately, and using these DCs may improve their writing towards higher proficiency; 2) present the applications of how to develop Chinese EFL learners' argumentative writing performance by drawing their attention to using these DCs; 3) provide a better understanding of the relationship between the learners' use of DCs and their English argumentative writing performance; 4) offer pedagogical implications for language instructors to develop syllabus and curriculum with regard to their instruction by teaching these DCs appropriately; and 5) provide some suggestions for pedagogical materials developers.

1.3 Organization of the Dissertation

This dissertation is designed in the following way: Chapter two first defines and classifies DCs. Second, it describes the role of DCs in EFL/English as a second language (ESL) writing, and some related studies on the use of DCs in EFL/ESL writing are reviewed, including relationship between the use of DCs and writing performance, and challenges of using DCs in EFL/ESL writing. Third, some teaching strategies of DCs are discussed, consisting of explicit language teaching, consciousness raising, and focus-on-form. Then it reviews some empirical studies about the effectiveness of different instructional methods on the use of DCs in EFL/ESL writing. After this, four research questions are presented. Chapter three describes the research design and the profiles of the participants, along with the instruments used for this research and procedures of the data collection and data analysis. Chapter four addresses the research questions proposed in Chapter two. Chapter five discusses the results concerning participants' perceptions of using DCs before and after the treatment, frequency and appropriateness of participants' use of DCs, their writing performance in the pre- and post-treatment writing tests, and the correlation between the appropriate use of DCs and argumentative writing performance in the post-tests. Finally, Chapter six represents the empirical, methodological, pedagogical implications and limitations of this study, future research directions, and conclusion.

Chapter 2: Literature Review

Before presenting the methods of this research, this chapter first introduces the definitions and classifications of DCs. Second, it describes the role of DCs in EFL/ESL writing, and the related studies on the use of DCs in EFL/ESL writing are reviewed. Third, some teaching strategies of DCs and related empirical studies are covered. Fourth, the efficacy of different instructional methods on the use of DCs in EFL/ESL writing is discussed. Finally, in considering gaps revealed from the literature until now, four research questions are put forward in this section.

2.1 Definitions and Classifications of DCs

2.1.1 Defining DCs

DCs are common formulaic expressions in English, which connect discourse units and indicate discourse logical relations. The complex nature of DCs has led to many research perspectives. There are some similar terms to DCs, among which are *discourse markers* (Blakemore, 2002; Fraser, 2006, 2009; Heine, 2013) and *pragmatic markers* (Andersen, 2001; Aijmer, 2013; Lohmann & Koops, 2022). These designations are often used interchangeably, which can create confusion about their functions (Abdi, 2021). Abdi asserts that “one way of distinguishing between these concepts is to categorize them from general to specific” (p. 34). For example, pragmatic markers (henceforth PMs) are lexical expressions “occur as part of a discourse segment but are not part of the propositional content of the message conveyed, and they do not contribute to the meaning of the proposition, *per se*” (Fraser, 2009, p. 295). These markers contribute to most conversations, indicating semantic and pragmatic relationship between messages. Discourse markers (henceforth DMs) are more general expressions

compared to PMs (e.g., Brinton, 1990; Schiffrin, 2001), however, in some studies, DMs are often subordinated to PMs. For example, Fraser (2009) categorized DMs as subtypes of PMs in consort with “basic pragmatic markers (e.g., *I promise, please, and my complaint*),” “commentary pragmatic markers (e.g., *fortunately, frankly, and certainly*),” “discourse markers (e.g., *on the contrary, anyway, and as a result*),” and “discourse structure markers (e.g., *in summary, returning to my previous topic, and now*).” DMs “signal a relationship between the interpretation of the segment they introduce, the second sentence (S2), and the prior segment, the first sentence (S1)” (Fraser, 1999, p. 950), without representing a semantic relationship between the segments. Based on denoting the semantic relation, DMs were subcategorized further by Fraser (2006). The subcategories were: elaborative DMs (e.g., *and, anyway, furthermore*), contrastive DMs (e.g., *on the contrary, however, but*), inferential DMs (e.g., *as a result, so, consequently*), and temporal DMs (e.g., *then, eventually, after*).

Although the term DMs is often used interchangeably with DCs, the two appellations can be differentiated from each other. Bordería (2006, 2008) distinguished two terms on the basis of usage and dimension. He claimed that, since 1980s, European scholars used the word “connective,” whereas scholars in the United States prefer to use “marker.” With respect to dimensions, he pondered that DCs are the subcategory of DMs. However, different from Bordería’s (2008) last assertion, the concepts of DMs overlaps with DCs between Fraser’s (2006) taxonomy and Halliday and Hasan’s (1976). In fact, Halliday and Hasan (1976) examined conjunctive relations signaled by DCs with the study of textual cohesion; they classified conjunctions into additive, adversative, and casual types, which are consistent with Fraser’s (1999, 2006, 2009) elaborative, contrastive, and inferential DMs.

Regarding the claim that some of the terms (e.g., discourse markers and pragmatic

markers) are “particularly characteristic of spoken dialogue” (Biber et al., 1999, p. 140), DCs are used in this study because of the connecting functions they serve in a written context.

Warner (1979) defined DCs as “the surface representations of certain semantic relations binding the logical structures underlying sentences in discourse” (p.21). They are a group of linguistic devices used for representing different logical meanings between clauses or sentences as well as performing a link function for written English. DCs join two independent clauses, but with a semicolon (;) or a period (.). Good writers employ the position of DCs to emphasize on the element that precedes the connective, and also they tend to vary the position of the DCs to avoid monotony (Kalajahi et al., 2012). DCs not only can appear at the sentence-initial but also in the middle or at the end of sentences. The punctuation is different based on the position of the DCs.

a. Initial position: The DC is located at the beginning of the second clause.

Examples: We were late for the meeting; *therefore*, we had to make another appointment.

We were late for the meeting. *Therefore*, we had to make another appointment.

b. Middle position: The DC is located in the middle of the second clause, often between subject and verb. In this situation, the subject is stressed and contrasted.

Example: Mary spends her free time reading novels; George, *on the other hand*, is more interested in travelling.

c. Final position: The DC is located at end of the second clause.

Example: Mary spends her free time reading novels; George is more interested in travelling, *on the other hand*.

Here the causation and contrastive relations are demonstrated respectively by *therefore* and *on the other hand* in the above examples. Without these DCs, it is unlikely to create coherent

texts. More importantly, without them, the underlying logical relations among these sentences may become vague for readers or listeners.

Over the past four decades, *coherence theory* (Halliday & Hasan, 1976) and *relevance theory* (Sperber & Wilson, 1986, 1995) have been the basic frameworks for the analysis of DCs. The main assumption of coherence theory is that texts are coherent, which is marked by a set of coherent relations by using DCs (Halliday & Hasan, 1976; Knott & Dale, 1994; Mann & Thompson, 1988; Zufferey et al., 2015). Furthermore, Schourup (2011) stated that research on DCs “commonly begins from the assumption that these expressions function primarily to signal relationships between units of discourse and thereby contribute to discourse coherence or textuality” (p. 2110).

While the coherence theory emphasizes more on the textual functions, relevance theory stresses on cognitive processes (Blakemore, 2002). The coherence theory clarifies the functions of DCs in the text, but it is unable to explain the reason why the improper usage of DCs may cause incoherence so that hinders the readers’ understanding of the propositional content, and readers can not realize the links between incoherence and problems in reading. Relevance theory may provide an explanation, as is understood, the hearer/reader may interpret what they are being informed in a variety of ways, but will probably choose the most relevant expressions. Incoherence, or misunderstandings, may make that those most relevant expressions interpreted in an incorrect way, which would cause problems with reading comprehension.

With their relevance theory, Sperber and Wilson (1995) proposed that when new information is received, depending on the context of information and on the information already existing within the receiver’s mind, contextual effects (CEs) will be achieved in one

of the three following ways: by strengthening an assumption (new information may provide further evidence for strengthening old assumptions), by contradicting an assumption (new information may provide evidence against the old assumptions), or by making a contextual implication (the union or interaction between new and old information may lead to a different implication). They claimed that newly-presented information is relevant when the person receiving that newly-presented information believes or disbelieves that information, and acts accordingly. This is when CEs become relevant. DCs are one type of linguistic devices that may have an effect for the reader to interpret the information appropriately by pointing them to what the writer wants to express. It is acknowledged that the incorrect usage of DCs may lead to incoherence in reading (Hu & Li, 2015). The reader may understand the function of DCs, but they may not have received clear instruction on how to use DCs correctly, so when reading a text, the reader may interpret the meaning of the text in a different way, and therefore making the reading comprehension of that text more difficult. However, a hearer or a reader, when interpreting sentences, may have several options for understanding those sentences and would choose the most relevant interpretations. Then, in a given context, the reader's/hearer's task is to find the most relevant interpretation (Sperber & Wilson, 1995). DCs direct the hearer/reader by limiting the possible interpretations, and therefore, as Blakemore (1992) noted, DCs "encode instructions for processing propositional representations" (p.150). In other words, the function of connectives is to guide "speakers or hearers to find the meaning which underlie surface utterances" (Blakemore, 1987, p. 9). In this research, different types of DCs can be classified based upon different CEs under the framework of relevance theory.

2.1.2 Classifying DCs

It is important to note that when Sperber and Wilson explicated CEs, they did not provide further analysis for different types of CEs. In fact, DCs can be further categorized. Specifically, there are three main types of DCs and ten sub-types of DCs (Biber et al., 1999; Chen, 2002; Hu & Li, 2015; Hyland, 2005); that is, Type I (strengthening assumption): *additive* (e.g., *also, in addition*), *sequencer* (e.g., *first, second*), *appositive* (e.g., *for example, similarly*); Type II (contradicting an assumption): *adversative* (e.g., *but, yet*), *concessive* (e.g., *although, though*), *alternative* (e.g., *or, alternatively*), *corroborative* (e.g., *in fact, actually*), *contrastive* (e.g., *on the other hand, in contrast*); and Type III (making contextual implications): *causation* (e.g., *because, so*), *summation* (e.g., *to conclude, in a word*). The concept and examples of these DCs presented as follows:

1. Type I (strengthening assumption):

a. Additive DCs: These kinds of DCs are adding information to the previous information.

Example: I don't want to go traveling. *Furthermore*, I have no time to do so.

b. Sequencer DCs: These DCs are often used to list the key points that the writer inclines to indicate sequence and process.

Example: *First*, I passed my proposal. *Second*, I begin to write my first draft.

c. Appositive DCs: These DCs are used to provide examples the information clarified.

Example: It's very expensive to live in this city. *For example*, I pay 30 Yuan for my breakfast.

2. Type II (contradicting an assumption):

a. Adversative DCs: These DCs are used to indicate a contrast of information.

Example: They are hard-working *but* not very creative.

b. Concessive DCs: These DCs demonstrate unexpected information.

Example: She is very generous *although* she is poor.

c. Alternative DCs: These DCs are used to show an option or possibility.

Example: We could go to the Chinese restaurant; *alternatively*, we could try that new French restaurant.

d. Corroborative DCs: These DCs are used to add a new idea to strengthen an argument.

Example: He has not finished his homework. *In fact*, he has not started it.

e. Contrastive DCs: These DCs introduce information that is opposite from previous information.

Example: She cannot stand spicy food; *conversely*, her husband is fond of spicy hotpot.

3. Type III (making contextual implications):

a. Causation DCs: These DCs indicate cause and effect of the preceding information.

Example: He gets a promotion *because* he works very hard.

b. Summation DCs: These kinds of DCs are to summarize the information in the preceding discourse.

Example: *In conclusion*, I have to thank you all for coming to my celebration party today.

2.2 The Role of DCs in EFL/ESL Writing

Writing plays an essential role in language communicative activities. A person can communicate with their readers via writing. As a communicative activity, writing “needs to be encouraged during the language learners’ course of study” (Dastjerdi & Shirzad, 2010, p. 156). Compared with spoken interaction, the writing process requires more demands on the context of the text. For second language (L2) or foreign language (FL) learners, writing is more complicated since it tests their ability of using the target language to express their ideas.

As a result, it requires much time and skill for the non-native English writers to produce a coherent text. To produce coherent discourse, writers have to engage in readers' reaction and make a text meaningful and interpretable (Grice, 1975). One of the most essential devices is DCs. Zufferey et al. (2015) asserted that "DCs are important indicators of textual coherence and mastering them is an essential part of acquiring a language" (p. 389). Applying DCs in writing means that the writer has predicted the readers' interactive frames and knowledge schemas (Tannen & Wallat, 1999). If both readers and writers stem from the same discourse community and use similar mappings, effective comprehension will deal with readers' understanding of the contextual resources, and as Sperber and Wilson (1998) stated, effective comprehension will "search for maximal relevance" (p. 9). Therefore, using DCs can help readers easily follow the writers' ideas in a logical sequence, infer intended meanings, and interpret the pragmatic prepositions of the text (Fareh et al., 2020; Pérez-Llantada, 2003). If writers are acquainted with the functions of DCs and use them appropriately, they can set up a logical connection for the readers (Binmahboob, 2022). Additional benefits to EFL/ESL learners' use of DCs are also noted by Zufferey et al. (2015, p. 392),

- (a) when sentences are linked together by a connective, the second segment is read faster compared to relations conveyed by juxtaposing segments;
- (b) readers have a better recall of the content of the relation when a connective is used;
- (c) in addition, readers generate more inferences from discourse relations conveyed by connectives compared to implicit relations, and they also answer questions faster.

Therefore, readers might be able to follow the ideas presented more easily in the text if non-native English writers learn to use DCs properly. As Kalajahi and Abdullah (2015) stated, "DCs can properly signal the relations of their utterances to those which precede and follow"

(p. 441). Hence, using DCs correctly is a necessary part of effective communication. Rahimi (2011) suggested that when communicating in English, non-native English Speakers (NNES) who understood how to use DCs appropriately would have more success than NNES who were not able to understand the appropriate use of those same DCs.

2.2.1 Studies on the Use of DCs in EFL/ESL Writing

2.2.1.1 Relationships between the Use of DCs and Writing Performance. In the past twenty years, numerous studies have investigated learners' use of DCs in EFL/ESL writing (e.g., Al Shamalat & Ghani, 2020; Barton, 1995; Cheng & Tsang, 2022; Mo, 2015; Yang & Sun, 2012), and some of them (Al Shamalat & Ghani, 2020; Yang & Sun, 2012) have also examined the correlation between the use of DCs and writing quality. However, the findings, to some extent, have been contradictory due to the different research designs. Some researchers identified that the use of DCs positively correlated with the quality of EFL/ESL writings (e.g., Chen, 2002; Liu & Braine, 2005; Yang & Sun, 2012). For example, Yang and Sun (2012) investigated 60 essays written by Chinese university sophomores and seniors of various abilities in English argumentative writing. Upon examining the frequency of conjunctions used, relative to how well the essays were written, they found that the senior students' essays used conjunctions more frequently and appropriately than compared to the sophomores' essays. Liu and Braine's (2005) study offered a similar conclusion from studying 50 argumentative essays written by Chinese undergraduate non-English majors from an English placement test of Band 3, which is a similar English proficiency level to IELTS Band 6 to 6.5. Liu and Braine's conclusion was that when more conjunctions and cohesive devices were correctly used by students, such use tended to correlate positively with students'

argumentative writing. Likewise, building on Blakemore's (1987, 1992) studies, Chen (2002) reported an investigation that how 67 fourth-year undergraduate English majors at advanced level in China used 57 DCs in their English argumentative writings from the pragma-cognitive perspective, which was encoded in writing from the conceptual meaning (i.e., reflecting the central idea of the writing) and the procedural meaning (i.e., facilitating the comprehension of the writing). The researcher aimed at examining English majors' pragma-cognitive awareness of conveying procedural meaning in argumentative writing. In his research, there were three types of DCs (namely, strengthening an assumption, contradicting an assumption, and making contextual implications) as well as 16 sub-types. Chen (2002) discovered that Chinese undergraduate students tended to use the first type (i.e., *additive, progressive, sequencer, illustration, and appositive*) more than the other two types (i.e., *adversative, concessive, alternative, corroborative, contrastive, causation, inference, conclusive, purpose, summation, and examples*). Besides, Chinese undergraduate students tended to use more additive (e.g., *and, also*), contrastive (e.g., *on the contrary, on the other hand*), and conclusive (e.g., *in a word, in conclusion*) DCs than the other 13 sub-types of DCs when using DCs to connect two sentences together in English argumentative writing.

In contrast, some scholars claimed that DCs were not significant predictors in judging the quality of writings (e.g., Al Shamalat & Ghani, 2020; Rahimi, 2011). For instance, Rahimi (2011) focused on the frequency and types of DCs employed in two different essay genres (argumentative and expository writings) written by 56 Iranian English majors, as well as examined the impact of the use of DCs on the Iranian EFL undergraduates' writing quality. The results showed that the elaborative markers were most frequently used in both types of compositions, followed by contrastive and inferential markers, reason, exemplifier, and

conclusive markers. The results also indicated that contrastive and conclusive markers were employed more frequently in argumentative than in expository writings by the participants. Nonetheless, the finding of the research did not show a statistically significant correlation between the use of DCs and writing quality in argumentative and expository essays of Iranian EFL learners.

Another study, Al Shamalat and Ghani (2020), generated similar findings. They examined the effect of conjunctions used in Jordanian EFL learners' overall quality of argumentative writing. Nonrandom purposive sampling was used to select 60 undergraduate students at the Department of English Language and Literature at Mu'tah University in Jordan. The research results revealed that there was negative correlation between writing quality and the frequency of conjunctions (e.g., *also, but, first of all, secondly, on the other hand, in addition, and, to sum up*) as cohesive devices, which indicated the frequent use of conjunctions by Jordanian EFL learners did not improve their argumentative writings.

In fact, the contradictory findings about the correlation between DCs and writing quality may come from the limitations of research design in previous investigations. For example, some studies (e.g., Al Shamalat & Ghani, 2020; Liu & Braine, 2005) exclusively focused on a single proficiency level of EFL/ESL learners; thus, the positive and negative association between the use of DCs and writing scores found out by the researchers presented the different results. On the other hand, a few previous works (e.g., Chen, 2002; Rahimi, 2011) mentioned earlier were conducted by corpus analysis, which described language use in a particular context by using corpus resources (Omidian et al., 2023), and their findings were not based on empirical studies that "observe the rules of empiricism and use quantitative and qualitative methods for gathering evidence" (Bouchrika, 2023, Definitions section).

Therefore, considering these observations, more studies are needed to identify the role of DCs in relation to the quality of writing.

2.2.1.2 Challenges of Using DCs in EFL/ESL Writing. In addition to the association between the use of DCs and writing quality, researchers are also concerned about the appropriateness of using DCs in the writing of EFL/ESL learners (e.g., Field & Yip, 1992; Ghasemi, 2013; Junina, 2022; Paquot, 2008). First, EFL/ESL learners seem to use DCs incorrectly where they are expected to by logic (Čolović-Marković, 2012; Fareh, 2014; Putri et al., 2021), and they also fail to use DCs in the correct placement in the sentence (Lee, 2013; Paquot, 2008; Wang & Xie, 2022). Second, among a multitude of previous studies, the errors of using DCs by EFL/ESL learners have been presented with various types: misuse, overuse, and underuse (Asassfeh et al., 2013; Bolton et al., 2002; Tso, 2024; Yin, 2015). Misuse of DCs appears when a learner employs inappropriate DCs (Crewe, 1990). For example, some EFL learners have tendency to misuse ‘*on the other hand*’ for ‘*however*’ or ‘*but*’ when they are under the same semantic function of an adversative category (Hamed, 2014). The DC ‘*on the other hand*’ has inferred a contrastive relation between two sentences (Hamed, 2014). Another study found that language learners often apply ‘*in fact*’ inappropriately, which indicates a corroborative relation (conveying an increase in the strength of a preceding affirmation) rather an adversative relation (Oh, 2000; Cowan, 2008). These examples manifest that misuse of DCs may deliver different meanings from the original ones, and these misuse of DCs make the reader misunderstand about the text.

Furthermore, overusing DCs is another challenge that occurs in EFL/ESL learners’ writing. Previous studies examined this by a qualitative method (e.g., Crewe, 1990; Tang &

Ng, 1995). These studies offered some examples to show a number of DCs overused in the short paragraphs from students' writing. For instance, In Tang and Ng's (1995) study, a student used '*however,*' '*in fact,*' '*but,*' and '*so*' in a five-sentence paragraph. Crewe (1990) offered an example that an advanced ESL writer used at least ten connectives to write three short paragraphs. Using corpus analysis, Ma and Wang (2016) examined 25 DCs by using a NES and NNES written corpora. They chose part of the Louvain Corpus of Native English Essays (LOCNESS) as the NES corpus, which consists of the first-year and four-year American Marquette University students' 46 written essays (48, 281 words) focusing on social issues. For another, the NNES corpus includes 45 argumentative essays (48,721 words) written by the first-year Hong Kong university students of different majors. By comparing the frequencies of these DCs used in ESL learners and American students' writing, it was revealed that Hong Kong learners overused '*so,*' '*and,*' '*also,*' and '*moreover.*' Another study conducted among Hong Kong learners is by Hu and Li (2015), which compared the use of DCs in argumentative writings between L1 and L2 writers. In this study, the comparison is based on the data from the International Corpus Network of Asian Learners of English (ICNALE) which consists of essays written by NES and NNES from 10 countries and regions in Asia. The researchers chose the data from ICNALE written by university students from Hong Kong (52 participants, 104 essays), Singapore (100 participants, 200 essays), Thailand (100 participants, 200 essays) at upper elementary proficiency level, and NES (100 participants, 200 essays). The results showed that Hong Kong learners overused enumerating (e.g., *finally, first of all*), resultative (e.g., *therefore, as a result*) and summative DCs (e.g., *to conclude, all in all*) compared with L1 writers and participants from Thailand and Singapore. Thus, the overused DCs may affect the coherence or readability of the writing, "as readers

may be confused about the establishment of too many logical relationships” (Cheng & Tsang, 2022, p. 157).

By the similar token, L1 interference of the linguistic influences might be the factor for inappropriate use of certain DCs in EFL/ESL writing (Altunay, 2009; Forbes & Fisher, 2020). For instance, Chinese ESL learners are inclined to simply transfer Chinese connectives incorrectly, namely, translating the meaning of ‘*from another aspect*’ into ‘*on the other hand*’ in English (Field & Yip, 1992). In addition, Chinese writers usually apply a pair of conjunctions to make complex sentences (e.g., *because...so...* and *although...but...*), while in English there is only one conjunction (e.g., *because* or *so* and *although* or *but*), and some Chinese EFL/ESL learners tend to translate these DCs literally into English writing (Chan, 2010; Cheng & Tsang, 2022). These examples may show some reasons why EFL/ESL learners misuse and overuse some connectives in writing.

Several corpus studies unveiled some underused errors of DCs in EFL learners’ writing (Lei, 2012; Narita et al., 2004; Uçar & Yükselir, 2017). Lei (2012) investigated a corpus of applied linguistics dissertations involving 20 Chinese doctoral students’ use of DCs. The results indicated that there were some underused adverbials in students’ academic writing, for example, adversative types (e.g., *however*, *nevertheless*, *conversely*), additive types (e.g., *again*, *additionally*, *alternatively*), and causal/resultative types (e.g., *for example*, *thus*, *consequently*) and sequential types (e.g., *eventually*, *finally*, *next*). This study is limited by the certain type of texts collected in the doctoral dissertations of applied linguistics. The usage pattern of adverbials might be shown in different ways on other types’ students writing, such as BA/MA theses, term papers, and argumentative writing by the student writers. Therefore, the further investigation could examine those adverbials in different registers.

Emphasis could also be put on those underused adverbials in teaching for the Chinese EFL writers. In Japan, Narita et al. (2004) compared two sub-corpora of the ICLE (International Corpus of Learner English) in the genre of argumentation written by advanced Japanese EFL learners (Japanese third and fourth year college students) and native English speakers (NES) (American university students), in terms of the use of 25 logical connectives. Their findings showed that Japanese EFL learners underused some connectives, such as ‘*then*,’ ‘*yet*,’ and ‘*instead*.’ In this study, the results are only provided by a quantitative analysis of comparing two corpora. Although they have suggested some possible explanations of the Japanese EFL learners’ behaviors in connectives’ usage, further empirical research including a qualitative analysis is necessary to provide insights into EFL learners’ perceptions of using connectives.

In Turkey, by analyzing the Corpus of Contemporary American English (COCA), 20 scientific articles by NES, and 20 scientific articles by Turkish advanced EFL learners, Uçar and Yükselir (2017) examined whether the logical connector ‘*thus*’ was misused, overused, or underused in Turkish advanced EFL learners’ academic writing compared with NES. The results revealed that Turkish learners of English underused ‘*thus*’ in their academic writing in comparison to NES. As can be seen from the results of this study, ‘*thus*’ is not frequently used in Turkish advanced EFL learners’ academic writing in the corpus of COCA. However, ‘*thus*’ might reveal different frequencies, functions, and patterns for other learners from different linguistic backgrounds in different corpora. All in all, there is literature with plenty of evidence uncovering different error patterns made by learners of different L1 backgrounds in their writing corpora. In this sense, the usages of DCs in EFL/ESL writing need to be closely investigated in their authentic contexts. In line with Hamed’s (2014) study, the present research uses the terms ‘appropriateness’ and ‘inappropriateness’ instead of

employing ‘misuse,’ ‘overuse,’ and ‘underuse’ in previous studies when investigating the usage of DCs.

From the aforementioned studies, they indicate that for one thing, the current research findings in the literature with regard to DCs in writing are far from conclusive, thus further research would be helpful to address these issues; for another, based on the previous research, many EFL/ESL learners are unable to use DCs appropriately in writing. Therefore, researchers need to carry out more studies with multiple teaching methods in order to help learners overcome those difficulties of using DCs and benefit from the appropriate use of DCs, as well as contribute to the existing body of literature on the efficacy of explicit instruction about DCs in English writing among EFL students in the Chinese context.

2.3 Strategies for Teaching DCs

Language teaching is conducted by employing techniques and strategies. Wetzel et al. (2020) claimed that teaching DCs has important pedagogical implications for English learners. Therefore, teaching English learners how to use DCs appropriately “provides insights into not only the ways language is used in various genres but also the significance of making use of them to interact with others members of a social community” (Ergin, 2013, p. 27). In order to command DCs appropriately, it is essential for learners to receive instruction on the functions of DCs and incorporating them into the text they will produce. Hyland (2005) suggested “good writers are people who are better able to imagine how their readers will respond to their texts because the writers are familiar with the conventions and expectations which operate in particular settings” (p. 198). Therefore, raising learners’ awareness about using proper DCs for a specific purpose and audiences promotes effective communication

and helps them understand “how texts relate to particular contexts and ways of using language” (Hyland, 2005, p. 183). According to Catalán and Alba (2014), there are three strategies for teaching DCs, that is to say, explicit language teaching (ELT), consciousness raising (CR), and focus-on-form (FonF). The following subsections focus on discussing them one by one.

2.3.1 Explicit Language Teaching

Language teaching is carried out through different strategies and techniques. With regard to ELT, Catalán and Alba (2014) stated that “In explicit language teaching, the teacher encourages learners to pay attention to the target language in order to notice linguistic items, guess from context, make deductions or formulate and test hypothesis about linguistic items” (p. 201). Furthermore, they also asserted that explicit teaching is the opposite to implicit teaching and each teaching is related to different types of language knowledge in second language acquisition. Explicit knowledge refers to conscious knowledge, while implicit knowledge has connection with unconscious knowledge (Dörnyei, 2009). In fact, explicit and implicit knowledge may also develop at the same time during instruction (Dienes & Perner, 1999; Paradis, 2009), “and instruction, like learning and knowledge, can be either implicit or explicit” (Godfroid, 2016, p.4). As Ellis (2002) stated: “Even if the practice work is directed at implicit learning of the structure and no formal explanation is provided, learners (particularly adults) are likely to try to construct some kind of explicit representation of the rule” (p. 169). In addition, Hunt and Begler (2002) asserted some principles applied in explicit teaching, for example, “provide opportunities for intentional learning of vocabulary,” “provide opportunities for elaborating word knowledge,” and “provide opportunities for

developing fluency with known vocabulary” (p. 260-262).

2.3.2 *Consciousness Raising*

As an instructional approach in language teaching, CR focuses on a deliberate attempt to draw learners’ attention to a specific language feature (Ellis, 1995). It can also be referred to the “processes and techniques for making learners aware of salient features of the linguistic system” (Nunan, 2004, p. 213). In fact, in doing CR activities, teachers describe and clarify the targeted language feature by providing with data to learners. While completing the acquisition of the targeted feature, “the learners are expected to utilize intellectual effort to understand the targeted feature” (Chuah, 2014, p. 2). However, what kinds of activities can raise learners’ consciousness of DCs? According to Willis and Willis’ suggestion (1996), the learners could get help from teachers by engaging in CR activities, which “encourage them to think about samples of language and draw their own conclusions about how the language works” (p. 63). They also proposed the categorization of CR activities,

such as *identify and consolidate* (i.e., students are asked to search a set of data to identify a particular pattern or usage and the language forms associated with it), *classify* (i.e., students are required to work with a set of data and sort it according to similarities and differences based on formal or semantic criteria), *hypothesis building/checking* (i.e., students are given or asked to make a generalization about language and asked to check this against more language data), *cross-language exploration* (i.e., students are encouraged to find similarities and differences between patternings in their own language and patternings in English), and *reconstruction/deconstruction* (i.e., students are required to manipulate language in ways which

reveal underlying patterns), *recall* (i.e., students are required to recall and reconstruct elements of a text. The purpose of the recall is to highlight significant features of the text), and *reference training* (i.e., students need to learn to use reference works—dictionaries, grammars and study guides) (p. 69).

From these activities, it is crucial to note that the learners have to be given the right amount of exposure to these activities; otherwise, the learners would not be able to incorporate them (Chuah, 2014). Additionally, Jiang and Shu (2011) conducted an 18-week experiment on 120 English majors in the first-year of a two-year program at Huazhong Normal University of China. Their study was divided into a control group (CG) and an experimental group (EG) by incorporating CR activities (e.g., identification, pattern summarization, pattern-categorization, and oral gap-filling) into teaching prefabricated verbs chunks and verb patterns. Their results indicated that EG used higher frequency and accuracy of verb patterns than those in the CG; CR activities also promoted the use of the learners' reference materials (e.g., Collins dictionaries and Cobuild corpus), their ability to realize gaps in meaning, and increased learners' confidence in learning prefabricated English verbs chunks and verb patterns in writing. In their view, CR activities have the following features: (a) they stress the connection between form, meaning, and function (Nunan, 1991); (b) they use inductive approach (Willis, 1993); (c) they employ a discovery rather than a presentational approach (i.e., clarify the target language feature by providing data to draw learners' attention) (Ellis, 1992); and (d) they are "concept-forming oriented," and do not need learners to produce the target language feature. Grounded on the foregoing features, Jiang and Shu believed Chinese language teachers should be encouraged to use CR activities for teaching English chunks and patterns. To conclude, these CR activities mentioned before provide learners with an explicit

instruction of the particular language form so as to make learners aware of its usage and occurrence in the discourse (AlHassan & Wood, 2015).

2.3.3 Focus-on-Form

Referring to the term of FonF, it is crucial to distinguish the other two different but related terms: Focus-on-forms (FonFs) and focus-on-meaning (FonM). FonFs is a teaching approach which teachers focus on instructing the target linguistic features for developing learners' linguistic accuracy. It has been traditionally related to the *Grammar-Translation Method*. On the contrary, FonM is an instructional approach in which learners attempt to learn communicative skills, and teachers focus on instructing learners' linguistic fluency. FonM has been traditionally connected with a learner-centered approach in language learning. Lastly, FonF was first introduced by Long (1988, 1991), which refers to an instructional approach that facilitates learners' attention to linguistic forms while they participate in doing meaning-focused tasks. In fact, many researchers have different views about the types of FonF. For example, according to Doughty and Williams (1998a), FonF consisted of proactive FonF and reactive FonF, the former "entailing selecting in advance an aspect of the target to focus on" (p. 198), and the latter "requiring the teacher notice and be prepared to handle various learning difficulties as they arise" (p. 198). That is to say, "proactive FonF assumes that focus on a linguistic form in the L2 classroom is planned in advance while reactive FonF assumes that focus on a linguistic form is incidental" (Yan, 2012, p. 177). In addition, Ellis (2001) further classified FonF into planned FonF and incidental FonF. Planned FonF is similar with the proactive FonF proposed by Doughty and Williams, which shows that "a linguistic form is focused on in the meaning-based L2 context with advance preparation"

(Yan, 2012, p. 177), while incidental FonF shows “a linguistic form is focused on without advance preparation” (Yan, 2012, p. 177). Actually, Ellis (2001) and Moreno Pichastor (2006) suggested instruction relating with a planned FonF contained enriched input, which was modified to show learners with plentiful examples of the target structure while concentrating primarily on meaning. Therefore, “the tasks that accompany the enriched input are communicative in nature and require learners to respond to the content of the input” (Moreno Pichastor, 2006, p. 160). Ellis (1996) claimed that acquisition appeared due to the frequent exposure to a target feature.

Overall, all these above mentioned strategies for teaching DCs with the purpose of developing learners’ use of DCs and writing proficiency are reckoned to be of significance because those strategies applied by language instructors might help learners to compose coherent, fluent, and accurate writings.

2.4 Effects of Different Instructional Methods on the Use of DCs in EFL/ESL Writing

Over the years, investigating the effectiveness of different instructional methods on the use of DCs in the EFL/ESL writing field has garnered many researchers’ attention. Many language instructors have conducted studies about teaching DCs in an explicit way (e.g., AlHassan & Wood, 2015; Ergin, 2013; Jones & Haywood, 2004; Liou & Chen, 2018). Other researchers have suggested teaching DCs in an implicit way (e.g., Kapranov, 2018). What is more, a number of studies have underscored the integration of explicit and implicit instruction on teaching DCs (e.g., Moghaddasi et al., 2020; Yaghoubi & Ardestani, 2014).

To begin with, one group of studies has been involved in investigations that drew attention to the explicit instruction of DCs. One example is AlHassan and Wood’s (2015)

study, and they conducted a ten-week study to examine the effects of focused instruction of the target formulaic sequences (FSs) (i.e., 40 FSs and 25 collocations) on the academic writing skills of 12 Canadian university L2 learners from different proficiency levels. In their study, 40 FSs and 25 collocations were extracted from two sources: four previous studies in the field of discourse analysis (Hyland, 2008; Lewis, 1997; Nattinger & DeCarrico, 1992; Simpson-Vlach & Ellis, 2010), and COCA using Word and Information Function. The treatment period involved three types of activities (presentation, practice, and uncontrolled production exercises). All participants were required to write paragraphs (like the one used in the Writing Task 1 of the academic IELTS test) at each stage (pre-test, post-test, and delayed post-test) in order to examine any differences in the frequency and occurrence of the target FSs before and after the treatment period. The results revealed that L2 learners at different proficiency levels significantly increased in the use of the target FSs in the post-test compared with the pre-test. In addition, after explicit instruction of FSs, all participants had a tendency to use almost the same number of the target FSs in the post-test and delayed post-test, which suggested that the participants' use of FSs was relatively stable after the treatment period. These results suggested that focused instruction seemed to have an effect on learners' acquisition and retention of FSs in their academic writing. However, the researchers used a small sample size and provided quantitative analysis to interpret the results, without further investigation of learners' attitudes towards explicit instruction of FSs. If the researchers consider developing another research question about learners' perceptions of learning FSs, they could conduct qualitative analysis, such as a post-task interview or survey, it could provide valuable insights into the learners' learning process.

In a similar vein, Ergin (2013) conducted an explicit instruction of metadiscourse

markers (henceforth MDMs, e.g., *in other words, on the one hand and as well as*) on 31 Turkish EFL undergraduate students at upper-intermediate level with a four-week treatment. All students were required to do a pre-test to examine their MDMs' use and overall writing performance. After the pre-test, all students participated in a four-week treatment. The participants were given explicit instruction of MDMs by means of training materials designed by the researcher. During the treatment, the students were provided the targeted MDMs whose functions were explained and many guided activities were carried out (e.g., completing the sentences in a proper way referred to the given MDMs in the first sentences, underlining or adding the MDMs in the text, and generating the sentences by using MDMs). After the treatment, the students wrote the identical test in the post-test to explore whether the treatment had any impact on their use of MDMs and writing performance. The content analysis of MDMs used in the pre- and post-test was employed to count their frequency occurrence and to identify their accurate or in accurate use of MDMs. From the results, the number of MDMs used in the post-test was more than the pre-test, and also some individual students increasingly used MDMs when compared to those used by the same student in the pre-test. Furthermore, Wilcoxon Signed Ranks test was used to examine any changes in the participants' writing performance by comparing the results of their pre- and post-tests. The findings of this research demonstrated a significant difference between the participants' pre- and post-test results, which indicated that their writing performance improved after the four-week treatment. Finally, there are a few limitations in this study. First, a small sample size was used. Moreover, the treatment only lasted four weeks. Future research with a larger number of participants from different language proficiency levels may have provided more data on learners' acquisition of MDMs by the explicit instruction, which may have an

influence on the results. Additionally, qualitative analysis could also be conducted for exploring learners' acquisition process. Thus, future study employing different methods may extend the scope and range of investigation.

Another exploratory study demonstrated that explicit instruction could facilitate the acquisition of formulaic language. Jones and Haywood (2004) carried out a ten-week study, including two-week explicit instruction, with 21 participants at an intermediate level from different countries (ten participants in the treatment group, and 11 participants in the control group) during a pre-session English for Academic Purposes (EAP) course. The participants' minimum language proficiency level was IELTS Band 4.5. Their study was implemented to follow three psychological processes (i.e., *noticing*, *retrieving*, and *generating*) for vocabulary learning proposed by Nation (2001). The training contained two components: reading and writing. In the reading classes, the instructors clarified the usage of FSs and raised the participants' awareness of the FSs in the selected reading texts. The reading classes also carried out practice activities of the FSs in controlled situations. In the writing classes, the students first were required to review what they did in the reading classes in order to support their four cause-effect and problem-solution type of writings. Then, the students were asked to analyze the functions of FSs in 34 contexts, to categorize them in accordance with their lexico-grammatical patterns, and to produce concordance texts by using a concordancing program. The results showed that most students had drawn more attention to FSs, and individual students could use some specific FSs appropriately in their writings. The researchers concluded that explicit teaching approach promoted students' acquisition of some FSs. However, there are some limitations in the Jones and Haywood's (2004) study. To begin with, two instructors who may have different teaching methods taught two groups in the

research. Moreover, there was only two-week explicit instruction on FSs before collecting participants' essays as a post-test. Therefore, future study could focus on the investigation of the instruction of FSs for longer periods of time to find out to what extent the researchers could help learners acquire FSs in academic contexts.

Similarly, Liou and Chen (2018) investigated the effectiveness of explicit instruction on students' awareness and use of academic FSs (multi-word units) for writing in one intact class. There were 15 EFL college students from Taiwan who were recruited from a third-year English major class. In Liou and Chen's study, 55 target academic FSs were used, which were selected from five sources (i.e., Ackermann & Chen, 2013; Hsu, 2014; Martinez & Schmitt, 2012, Simpson-Vlach & Ellis, 2010; Academic Phrasebank from the University of Manchester). Their measurements contained four parts: (a) a pre-test, post-test, delayed post-test on target FSs, (b) an in-class timed summary writing between the pre-test and post-test, (c) the use of taught FSs in an after-class book report (as delay post-test 1, at the end of semester) and research report assignments (as delayed post-test 2, four and a half months later), and (d) a perception questionnaire of the explicit instruction. First, when it comes to the comparisons of the pre-test, the post-test and the delayed post-test of the target FSs, the results showed that there was a significant difference between the pre-test and the post-test. However, the results did not show any significant differences between the post-test and the delayed post-test. Second, to assess the mean scores of the summary writing of the participants in the pre- and post-test, the increase was statistically significant. Third, for the target FSs used in the participants' writing, there was a significant difference between their pre-test summary writing and the book reports, but the FSs used in their research reports appeared to decrease compared to the book reports after four and a half months. Finally,

according to the results of the quantitative analysis from students' responses to perception questionnaires, the high ratings showed that the participants considered that the explicit instruction of FSs could enhance their acquisition of FSs and their writing performance.

These results indicated that explicit instruction not only facilitated participants to acquire FSs in the short term, but it might also help participants' retention of the FSs in the delayed post-test. Furthermore, the explicit instruction contributed to the participants' improvement of their writing quality and their awareness of the increasing use of FSs in their writing activities.

Nevertheless, there are some limitations in this research. First, the study only recruited 15 participants from a third-year English major class to investigate the participants' use of academic FSs as a result of explicit instruction. If they could recruit more participants from different disciplines at different levels, the results might have been different and generalizable.

Further, the FSs instruction only lasted for five weeks. Therefore, the results only showed learners' performance on acquiring academic FSs in a short-term period rather than a

long-term period as the 90 minutes a week for ten weeks in focused instruction on FSs

(AlHassan & Wood, 2015). Last, in this study, the results obtained from the questionnaire

survey were analyzed exclusively using quantitative methods. To further explore learners'

perceptions of the treatments, qualitative analysis could be employed (e.g., interviewing the participants). In this way, learners' attitudes could be investigated in greater depth.

A second group of studies targeted teaching DCs along with implicit instruction. For instance, Kapranov (2018) examined the impact of implicit instruction of the use of DMs on 18 Ukrainian EFL university students at the advanced beginners' level in English writing.

There were nine participants exposed to the implicit instruction in the experimental group

(EG), whilst another nine participants were exposed to the explicit instruction in the control

group (CG). The EG was matched with the CG in the number, gender, and age variables. The English writing consisted of two tasks: Task 1—one month after the semester, one-paragraph descriptive essay titled *My Usual Day* in English; Task 2—at the end of the semester, one-paragraph descriptive essay titled *My Unusual Day* in English. In this research, the implicit instruction was implemented by the course teacher (who was the researcher of this study) and the DMs were introduced in the course book and other related activities (e.g., oral and written exercises) with translation of the DMs from English to Ukrainian. Nevertheless, the pragmatic functions and use of DMs were not given in the implicit instruction.

Conversely, the participants in CG were taught by another EFL teacher, who used the same course book as the participants in EG did. Participants in CG were exposed to the explicit instruction involved, (1) the translation of the DMs from English into Ukrainian; (2) specific information about the function of DMs in oral and written discourse in the English language; and (3) the focus on the DMs used in the course book both in oral and written exercises (Kapranov, 2018, p. 64). This study employed quantitative analysis by using the software program WordSmith for calculations of word frequencies. The results revealed that the participants in EG used limited DMs after implicit instruction. For instance, this study focused on teaching 18 DMs introduced in the course book (e.g., *also, and, anyway, as, because, but, finally, luckily, oh, OK, or, possibly, probably, quite, right, so, still, then*). The participants in EG used nine DMs (e.g., *also, and, because, but, or, quite, so, still, then*) in Task 1, and six DMs (e.g., *also, and, because, but, or, then*) in Task 2. Compared with Task 1, there was a quantitative decrease of using DMs in Task 2. Meanwhile, the participants in CG tended to show an increasing use of English DMs which has been identified in Task 2, and had not being presented in Task 1, specifically *also, as, possibly, quite, so, and still*. As a

result, the findings revealed that the implicit instruction of DMs at the advanced beginners' level of Ukrainian EFL learners appeared to be inadequate in the aspect of pragmatic competences on the basis of their use of DMs in the written tasks. Due to a small group of participants, with a quantitative analysis, this study only provides limited insights into teaching and learning of English DMs in terms of implicit instruction.

A final group of studies focused on teaching DCs with explicit and implicit approaches. For example, Alavinia and Aftabi (2013) probed into the impacts of the explicit and implicit instruction of MDMs on Iranian EFL learners' argumentative writing. Three groups of participants ($N = 70$) who were the third-year undergraduate students were chosen and assigned to two experimental groups, explicit instruction group (EIG) ($n = 32$) and implicit instruction group (IIG) ($n = 27$), and one CG ($n = 21$). The treatment used for the two experimental groups involved providing a list of functions and examples of both textual (interactive) and interpersonal (interactional) MDMs extracted from Hyland's (2005) metadiscourse model, in order to raise participants' awareness of MDMs. Different from teaching in IIG (through noticing strategy, in addition, no rule formation discussion was overtly done in this treatment), the researcher explicitly clarified the functions and usage of MDMs in the treatment. The participants in CG only followed the regular instruction of essay writing class. It is important to note that IELTS argumentative writing tasks were employed for the pre- and post-tests. By running one-way Analysis of Variance (ANOVA) and Analysis of Covariance (ANCOVA), the results revealed there was no significant difference between the effect of implicit and explicit instruction, and some students in EIG performed better than students in IIG. Furthermore, in the post-test, there was a significant difference between the writing performance of EIG and IIG in comparison with that of CG. In other words, both

methods were found to be effective in enhancing learners' argumentative writing performance. However, this study only explored the effects of two methods on MDMs in EFL learners' argumentation by using quantitative analysis. Further research could also explore the possible relationship of gender of participants and their writing improvement as a result of explicit and implicit instruction of MDMs on different types of writing production.

Another study of El-Dakhs et al. (2022) utilized Hyland's (2005) model of MDMs to compare the impacts of explicit and implicit instructional methods on Arab EFL learners' use of interactional MDMs in their writing, which also probed into those participants' perceptions of learning these markers in their writing classes. A total of 120 female undergraduates took part in this study, and they were divided into three groups: EG ($n = 41$), IG ($n = 46$), and CG ($n = 33$). All the participants were required to complete the same pre-/post-/delayed post-tests. During the treatment sessions, in the EG, firstly the instructor explained how to write city reviews with related MDMs. The participants learned the definitions of the target MDMs, that is to say, reader pronouns (referring to the use of second person pronouns and possessive adjectives to acknowledge the reader's presence, e.g., *you, your*), personal asides (allowing writers to address readers directly by briefly interrupting the argument to offer a comment on what has been said), appeals to shared knowledge (referring to the presence of explicit markers where readers are asked to recognize something as familiar or accepted), questions (instructing the reader to perform an action or to see things in a way determined by the writer, e.g., *consider, it is important to note, see*) and directives (the use of questions to invite engagement and bring the interlocutor into an area where they can be led to the writer's viewpoint) explicitly along with illustrative examples. Then, the participants read a sample city review, and they were required to underline and identify the markers in the text. Finally,

participants finished a cloze activity that summarized the city reviews they had read by utilizing the targeted interactional markers. On discussing the answers along with the instructor in class, participants identified different types of markers (e.g., hedges, boosters, attitude markers) they had used. In the IG, the first step was the same as what the participants in EG did. Then, the participants shared what they knew about the city they would read about, and afterwards the instructor organized some activities in groups (e.g., putting the scrambled paragraphs of the sample city review in order, providing feedback to the participants, reading the sample city review and answering comprehension questions). At last, the participants completed the same cloze activity as their counterparts in the EG. However, they were not required to find out the types of MDMs they used. In the CG, participants followed the regular course plans without receiving explicit and implicit instruction on the use of MDMs. By analyzing quantitative and qualitative data, the researchers reported a positive impact for explicit and implicit instruction with the MDMs on the EFL learners. Moreover, the participants reckoned the two methods of teaching MDMs were very helpful but they could not use what they had learned due to the task requirements. Last, there are some limitations in this study. First, they only recruited female participants, and a gender-balanced sample could be considered for replicating this study. Second, relatively short treatment duration (totally 140 minutes in both groups) involved in this study, and longer treatment sessions perhaps should be designed for future studies. Finally, this study only focused on the genre of city reviews, which is crucial to replicate this study with different genres.

In addition, Moghaddasi et al. (2020) examined the effects of explicit and implicit instruction of formal MDMs on 90 upper-intermediate Iranian EFL students' writing skills during eight-week treatment period. Two experimental groups (explicit instruction: $n = 30$;

implicit instruction: $n = 30$) received instruction, while participants in CG ($n = 30$) did not receive any instruction. A pre- and post-test research design was employed. Besides, quantitative data analyses were used in this study. An independent samples t -test was conducted to check if the instruction of formal MDMs had any significant effect on EFL students' writing performance. Moreover, the ANOVA was used to examine the effect of explicit or implicit instruction of MDMs on the students' writing and to explore which approach of instruction is more beneficial. The results of this study showed that these three groups had improved their writing in their post-tests when compared to those of their pre-tests, and the EGs' test scores on the target formal MDMs outperformed the CG. There was also a significant difference between the EGs and the CG on the improvement of writing. In addition, the results revealed that the explicit instruction method could be more helpful in improving EFL learners' writing performance. Yet, this study merely employed quantitative analysis for exploring the effectiveness of different instructional methods of MDMs, if the researcher conducted a qualitative analysis as well, learners' perceptions of learning MDMs in writing could be more generalizable.

Similarly, Yaghoubi and Ardestani (2014) investigated the effect of both explicit and implicit instruction of MDMs on 90 advanced Iranian students' writing skills. The participants were divided into one CG and two EGs (EG A: explicit instruction; EG B: implicit instruction). A pre- and post-test design was used to compare learners' writing performance among these groups. After eight successive sessions, their findings revealed that both explicit and implicit instruction of MDMs led to statistically significant improvement on the advanced Iranian foreign language learners' writing skills. However, the explicit instruction of MDMs did not show significant writing skill improvement as measured by

one-way ANOVA than the implicit instruction. In this study, the research participants are all advanced Iranian EFL learners, and future investigation might examine the different effectiveness of explicit and implicit instruction of MDMs on EFL learners' writing performance by recruiting participants from different proficiency levels.

To date, the effectiveness of different instructional methods is still being questioned, and thus merits more studies to examine its effects on EFL learning. Table 1 displayed a summary of some key studies about different instructions on the use of DCs in EFL/ESL writing.

Table 1. *A Summary of Different Instructions on the Use of DCs in EFL/ESL Writing*

Different instructional methods	References	Research purpose	Data collection methods	Key findings
Explicit instruction	AlHassan and Wood (2015)	To examine the effects of focused instruction of the target FSs on academic writing skills of 12 ESL students from different proficiency levels over ten weeks	Quantitative	Focused instruction had an impact on students' acquisition and retention of FSs to improve their academic writing
	Ergin (2013)	To investigate whether explicit instruction of MDMs has an impact on 31 Turkish upper-intermediate level EFL students' use of MDMs and their overall writing performance for a	Quantitative	The explicit instruction of MDMs has been effective in improving students' use of MDMs and their overall writing performance

four-week period

	Jones and Haywood (2004)	To investigate the effects of explicit instruction on formulaic language on 21 ESL students for cause-effect and problem-solution type of writings during a 10-week EAP pre-university course	Quantitative+ qualitative (classroom observation +interview)	No improvements in the CG and a slight improvement in the treatment group
	Liou and Chen (2018)	To investigate the effectiveness of explicit instruction on 12 EFL students' awareness and use of academic FSs for summary writing over 4.5 months	Quantitative	The participants used 60% of the target FSs in their writing, and the number of FSs used increased after explicit instruction; both FS test and writing from participants were significantly different from those in the pretest
Implicit instruction	Kapranov (2018)	To examine the impact of implicit instruction on the use of English DMs in written tasks on nine Ukrainian EFL students	Quantitative	The implicit instruction had no positive effects on EFL students' use of DMs in the writing tasks; the CG had a tendency to use English DMs in the written tasks by explicit instruction

	Alavinia and Aftabi (2013)	To examine the influence of the explicit and implicit instruction of MDMs on 70 Iranian EFL learners' (in the third year of BA program) argumentative writing for ten weeks	Quantitative	No significant difference between the effect of both methods; students in the explicit group performed partially better than implicit group learners; there was a significant difference between the performance of explicit and implicit groups compared to that of CG on the post-test; both methods had positive effects on EFL students' argumentative writing
Explicit and implicit instruction	El-Dakhs et al. (2022)	To examine the impacts of explicit and implicit instruction of MDMs on 120 pre-intermediate Arab EFL students' writing city reviews; this study also probed into the perceptions of Arab EFL learners on the instruction of these markers in their writing classes; it spanned a period of eight	Quantitative+ qualitative (perception questionnaire)	A positive influence on two methods of teaching the markers of self-mentions, appealed to shared knowledge, directives and questions; the participants regarded both explicit and implicit instruction as helpful but they could not

	weeks		always use what they had learned according to the different task requirements
Moghaddasi et al. (2020)	To investigate the effect of explicit and implicit instruction of formal MDMs on 90 upper-intermediate Iranian EFL students' writing skills over eight weeks (two hours a week)	Quantitative	Both methods of formal MDMs had impact on the writing skill improvement of the Iranian EFL students; students who received explicit instruction performed better in writing than students who received implicit instruction
Yaghoubi and Ardestani (2014)	To investigate the effect of explicit and implicit instruction of MDMs on 90 advanced Iranian EFL students' writing skills over eight successive sections	Quantitative	Both explicit and implicit of MDMs had significant effects on the EFL students' overall writing performance

To sum up, the results from AlHassan and Wood (2015), Ergin (2013), Jones and Haywood (2004), and Liou and Chen (2018) showed that explicit teaching helped EFL/ESL learners increase their formulaic language performance and promoted EFL/ESL learners' writing performance. Kapranov's (2018) research demonstrated Ukrainian EFL learners only

applied limited use of English DMs after implicit instruction of English DMs. Alavinia and Aftabi (2013), El-Dakhs et al. (2022), Moghaddasi et al. (2020), and Yaghoubi and Ardestani (2014) indicated that explicit and implicit instruction of MDMs had different effects on improving L2 writing. Due to the inconclusive findings of the effectiveness of different instructional methods in L2 writing, this research attempts to address the limitations of the previous studies to better understand the effectiveness of explicit instruction about DCs on Chinese EFL learners' argumentative writing performance across different writing proficiency levels. It is planned to (a) employ one instructor to teach participants at three different proficiency levels, (b) recruit a larger sample population, (c) explicitly instruct the use of DCs in one type of writing, argumentation, and (d) use quantitative and qualitative research methods to examine the effectiveness of explicit instruction of DCs and explore learners' perceptions of learning DCs.

2.5 Research Questions

This study examined the effects of explicit instruction of DCs on Chinese EFL learners' argumentative writing performance across different writing proficiency levels. The study specifically aims to address the following research questions:

1. What are the challenges perceived by Chinese EFL learners across different writing proficiency levels when they employ DCs in argumentative writing?
2. Does explicit instruction of DCs improve the use of DCs and writing performance in argumentative writing by Chinese EFL learners across different writing proficiency levels? To what extent?
3. What is the relationship between the appropriate use of DCs and writing

performance among Chinese EFL learners across different writing proficiency levels after receiving explicit instruction?

4. How do Chinese EFL learners across different writing proficiency levels perceive the effectiveness of explicit DC instruction in addressing their argumentative writing challenges?

Chapter 3: Methods

This chapter includes the methods implemented in the research. Section 3.1 provides the research design. Section 3.2 describes the profiles of participants. Section 3.3 presents the data collection instruments. Section 3.4 discloses the pilot study and clarifies the data collection procedures for the main study, and the last section describes the process of qualitative and quantitative data analysis in order to address four research questions.

3.1 Research Design

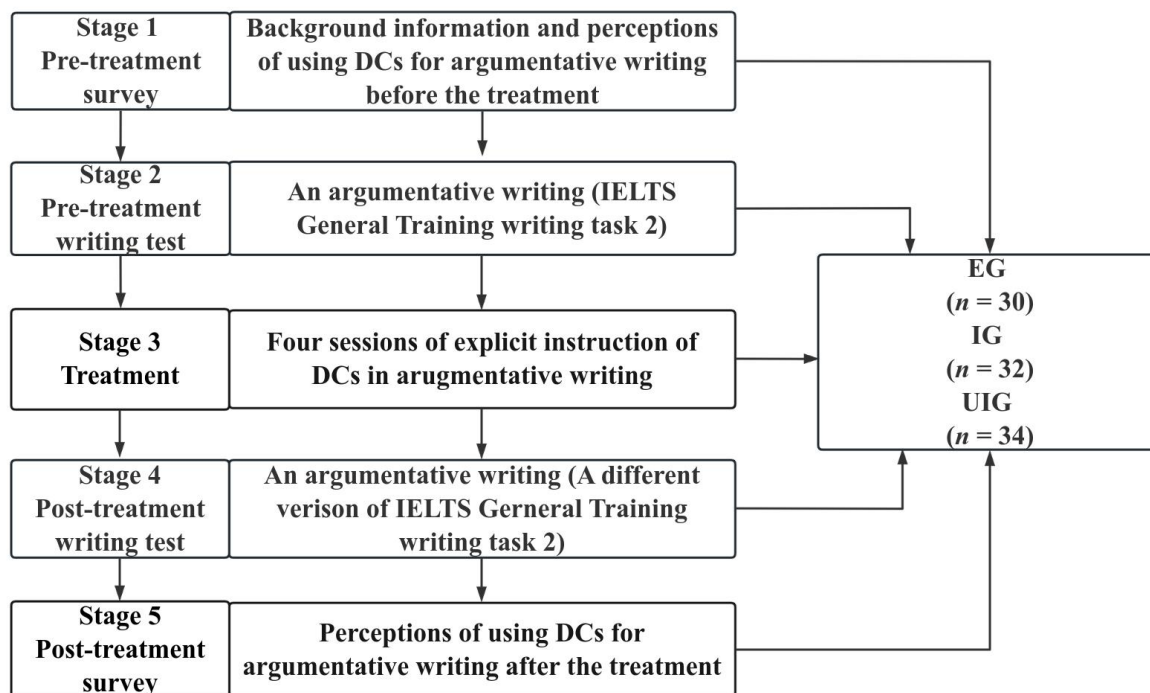
This section presents the overview of the study, which is further illustrated in Sections 3.2, 3.3, 3.4, and 3.5. The study involved Chinese undergraduate English majors across groups. There were 30 participants in the first group at the elementary level; 32 participants in the second group at the intermediate level; and 34 participants in the third group at the upper intermediate level, for a total of 96 participants. Elementary Group (EG), Intermediate Group (IG) and Upper Intermediate Group (UIG) underwent the same procedures under identical web-based conditions: (a) a pre-treatment survey (participants' background information and perceptions of using DCs for argumentative writing before the treatment) on Wenjuanxing¹ (<https://www.wjx.cn>); (b) a pre-treatment writing test (IELTS General Training writing task 2) on Wenjuanxing; (c) a four-week treatment (explicit instruction of DCs in argumentative writing) on Tencent Meeting² (https://cloud.tencent.com/act/event/tencentmeeting_free); (d) a post-treatment survey (participants' perceptions of using DCs for

¹Wenjuanxing is an online professional survey tool, which provides functions like survey participation, online testing, and voting.

²Tencent Meeting is a secure online video conferencing tool, which includes online documents collaboration, real-time screen sharing, and instant text messaging.

argumentative writing after the treatment) on Wenjuanxing; and (e) a post-treatment writing test (a different version of IELTS General Training writing task 2) on Wenjuanxing. Figure 1 provides the overall study design.

Figure 1. *Research Design*



Note. $N = 96$. EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group.

3.2 Participants

This study involved 96 Chinese undergraduate participants from a private university in China. Participants were chosen from first-, second-, and third-year English major classes, including 85 female and 11 male, aged 17 to 22 years. Among them, 30 were at the elementary level (first year: $n = 13$, second year: $n = 15$, third year: $n = 2$), 32 at the intermediate level (first year: $n = 9$, second year: $n = 18$, third year: $n = 5$), and 34 at the upper intermediate level (first year: $n = 2$, second year: $n = 10$, third year: $n = 22$). The

participant sample size in this study was chosen for the following reasons: (a) to ensure a reasonable time frame for research completion; (b) to carry out statistical analyses; and (c) to obtain detailed reports on DCs learning from participants. As to the participants' first language, most of them were Mandarin native speakers; three participants spoke Cantonese; and one participant spoke Hokkien, one spoke Hakka, and one spoke Hainan dialect. Most of the participants had never resided in an English-speaking country, with the exception of six participants who had gone to the United States for a three-month internship; and one who had travelled to the United States and Britain for two weeks. All participants had an average of 11.24 years of English learning experience. In this study, participants' pre-treatment writing tests were graded according to the IELTS General Training Module of Writing Band Score, and then they were grouped according to their scores evaluated by two experienced university English tutors. For the purposes of this study, all the participants were classified into three categories using the Common European Framework of Reference for Languages (CEFR) proficiency levels: A2 (elementary), B1 (intermediate), and B2 (upper intermediate), and the participants' scores in IELTS GT writing task 2 are converted into the CEFR scale in view of the description on the IELTS official website (e.g., <https://www.ielts.org/en-us/about-ielts/ielts-in-cefr-scale>). Specifically, participants who scored 3 to 3.5 out of 9 represented an elementary level of proficiency. The participants who scored 4 to 4.5 out of 9 represented an intermediate level of proficiency, and participants who scored 5 to 6.5 out of 9 represented an upper intermediate of proficiency. Table 2 presents general profiles of participants based on the completed pre-treatment survey.

Table 2. *Participants' Profiles*

Participants' general information	EG <i>n</i> = 30	IG <i>n</i> = 32	UIG <i>n</i> = 34	Overall <i>n</i> = 96
Gender	Female: 27 (90%) Male: 3 (10%)	Female: 28 (87.5%) Male: 4 (12.5%)	Female: 30 (88.2%) Male: 4 (11.8%)	Female: 85 (88.5%) Male: 11 (11.5%)
Age (years)	<i>M</i> = 19.07 <i>SD</i> = 1.05	<i>M</i> = 19.25 <i>SD</i> = 1.05	<i>M</i> = 20.35 <i>SD</i> = 1.37	<i>M</i> = 19.58 <i>SD</i> = 1.30
First language(s)	Mandarin (<i>n</i> = 27) Cantonese (<i>n</i> = 1) Hokkien (<i>n</i> = 1) Hainan dialect (<i>n</i> = 1)	Mandarin (<i>n</i> = 32)	Mandarin (<i>n</i> = 31) Cantonese (<i>n</i> = 2) Hakka (<i>n</i> = 1)	Mandarin (<i>n</i> = 90) Cantonese (<i>n</i> = 3) Hakka (<i>n</i> = 1) Hokkien (<i>n</i> = 1) Hainan dialect (<i>n</i> = 1)
Length of residence in English speaking countries (months)	<i>M</i> = 0.00 <i>SD</i> = 0.00	<i>M</i> = 0.01 <i>SD</i> = 0.04	<i>M</i> = 0.54 <i>SD</i> = 1.16	<i>M</i> = 0.20 <i>SD</i> = 0.73
Assessed writing proficiency	Year 1, <i>n</i> = 13 Year 2, <i>n</i> = 15 Year 3, <i>n</i> = 2	Year 1, <i>n</i> = 9 Year 2, <i>n</i> = 18 Year 3, <i>n</i> = 5	Year 1, <i>n</i> = 2 Year 2, <i>n</i> = 10 Year 3, <i>n</i> = 22	Year 1, <i>n</i> = 24 Year 2, <i>n</i> = 43 Year 3, <i>n</i> = 29
English language learning (years)	<i>M</i> = 10.50 <i>SD</i> = 2.23	<i>M</i> = 10.69 <i>SD</i> = 1.31	<i>M</i> = 12.41 <i>SD</i> = 2.63	<i>M</i> = 11.24 <i>SD</i> = 2.30

Note. *N* = 96. EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group.

3.3 Data Collection Instruments

The data collection instruments are presented in the following sub-sections.

a. Pre-Treatment Survey (Appendix 2). The pre-treatment survey was about participants' perceptions of being explicitly taught how to use DCs before the treatment, which included individual profile questions (Appendix 2a) and five open-ended questions

(Appendix 2b). Individual profile questions aimed to gather information related to the participants' backgrounds and histories (e.g., knowledge of other languages, educational experience, age when participants had first contact with English, years of learning English, and length of stay in English-speaking countries). The individual profile questions were adapted from Huang (2010a). Open-ended questions aimed to find out the challenges participants might have with the use of DCs in English argumentative writing before the treatment. As Huang (2019) explained, "using open-ended questions within questionnaires include the ability to allow the respondents the freedom to respond in their own words, elaborate on their thoughts, or qualify their responses, which they may not have been able to do fully in other question formats with set answers" (p. 3). Sample questions included "What do you know about words and phrases such as: 'although,' 'because,' 'nevertheless,' 'on the one hand'?" or "What's your experience when you use 'although,' 'because,' 'nevertheless,' 'on the one hand'?"

b. Pre-Treatment Writing Test (Appendix 3). Writing prompts were randomly chosen from the existing official English writing task 2 in IELTS General Training (IELTS General Training, 2019) test. Topics in writing task 2 were related to general interest, such as "whether children's leisure activities should be educational, how environmental problems can be solved, whether smoking should be banned in public places" (IELTS Test Format, 2019), and required test-takers to write an argumentation within 40 minutes. The topic of the pre-treatment writing test was "*Some people say the main way to be happy in life is to have a lot of money. How might having a lot of money make people happy? What other things in life can make people happy?*". The pre-treatment writing tests were not only used to examine the general features of DCs used in participants' argumentative writing, but were also used to

assess the participants' writing proficiency levels.

c. Treatment Plans (Appendix 4) and Materials (Appendices 5, 6, 7, and 8). I designed the treatment plans for three groups. In the pilot study, the instruction was delivered to a large traditional face-to-face class. In the main study, due to COVID-19, the instruction was delivered online in small groups. Given the focus of this research, I could not use any previous lesson plans or materials since they did not contain sections on DCs to meet the requirements of the study. The treatment plans for each group was designed drawing on several online sources (e.g., <https://page.reallygoodstuff.com>). For example, in the final week treatment, one of the exercises was that the participants were required to select appropriate given DCs from the list, and fill in the blanks according to the passage. The materials for treatment not only aimed to raise participants' awareness of using proper DCs in English, but also facilitate participants' acquisition of the DCs in their English writing performance. In order to choose suitable reading materials for the study, the articles for the treatment were retrieved from several websites that provided some sample essays of IELTS writing, which were first examined by using The Online Graded Text Editor tool "to determine whether a chosen article is suitable for specific learning purposes (e.g., intensive reading, development of fluency, or strategic development)" (Huang, 2018, p. 390). Schmitt et al. (2011) proposed that 95% to 98% of vocabulary coverage in the reading texts is necessary for learners to understand the texts.

d. Post-Treatment Writing Test (Appendix 9). After the treatment, the participants were informed that there was a different topic from the existing official English writing task 2 in IELTS General Training (IELTS General Training, 2019) test, titled "*The growth of online shopping will one day lead to all shops in towns and cities closing. Do you agree or*

disagree?”, to write about argumentation for the post-test. The post-treatment writing test was to measure any differences that explicit instruction might have made on three groups in using DCs appropriately in argumentative writing, as well as their writing performance, after the treatment. The rationale for using two different writing tests was to minimize the learning effect.

e. Post-Treatment Survey (Appendix 10). The post-treatment survey was to probe participants’ viewpoints on the process of explicit instruction of DCs on their argumentative writing performance. Furthermore, the post-treatment survey helped individual participants to reflect on their attitudes towards using target DCs during their writing performance. As the participants regarded English as a foreign language, they might feel uncomfortable or experience difficulty in completing the post-treatment survey in English. Therefore, the participants were given the option to answer the open-ended questions in their first language. Sample questions included “Please take a moment to reflect on how you use discourse connectives in English and Chinese. Can you see any similarities or differences in how discourse connectives are used in both languages?” or “Has your understanding of DCs improved by receiving explicit instruction?”

f. Selection of DCs. In this study, the purpose of teaching DCs is to examine whether the explicit instruction provided could improve the use of DCs by Chinese EFL learners and their writing performance. In order to choose the appropriate DCs for the participants to use in argumentative writing, and in addition to observing what DCs the participants actually used in my pilot study, I used MICUSP (Michigan Corpus of Upper-Level Student Papers) (<http://micusp.elicorpora.info/main>) to first check the frequencies of 60 DCs (Hu & Li, 2015; Yuan, 2020) used by NNES and NES in an argumentative essay context so as to find out what

kinds of DCs NES tended to be used frequently. If NNES could employ those commonly used DCs by NES, it might be helpful for NNES to improve their argumentative writing (Liu & Braine, 2005; Yang & Sun, 2012).

MICUSP offers free access to 829 papers (approximately 2.6 million words) written by both NNES and NES (in their final year of undergraduate and first to third year of graduate studies) who gained an A-grade for their papers. It contained different textual features (e.g., abstract, definitions, and discussion of results) and different genre types (e.g., argumentative essay, creating writing, and critique) from 16 disciplines (e.g., biology, civil and environmental, economics, education, and English) (Römer & Wulff, 2010). MICUSP was chosen for its relevance in terms of its argumentative essays sub-corpus to identify which DCs were more commonly used.

When checking the frequencies of 60 DCs in MICUSP, I selected the following five groups of selection boxes: “student levels” (senior undergraduate), “nativeness” (NNES or NES), “textual features” (no restriction), “paper types” (argumentative essay), and “disciplines” (no restriction). In total, 114 papers and approximately 676,000 words in the corpus were used to check the frequencies of each DC. However, considering the time limitations, it must be noted that it was impossible to go through 676,000 words to inspect each of the DCs’ particular usage; thus, about 30% of DCs were randomly selected to check their specific usage. As such, an approximate calculation on the frequencies of those DCs was provided for reference to determine the DCs to be used in the study based on MICUSP corpus.

After observing and obtaining the frequency data of 60 DCs, some DCs were excluded for the following reasons:

1. DCs have many usages, and in some cases, do not actually function as DCs (i.e., *and, for another, rather, instead, briefly, consequently*). Here are some examples taken from MICUSP to illustrate each DC:

a. In his dream, the earth *and* sun are no longer relevant in their time-keeping. (paper ID: ENG.G0.18.4)

b. A life-cycle progression comes full circle, as one life ends only *for another* to begin -- sickness and death unexpectedly heralding of birth and new life. (paper ID: ENG.G0.15.1)

c. Reality is composed of a *rather* tenuous fabric in the catalogue of fantasy novels we have explored this semester. (paper ID: ENG.G0.06.2)

d. For Marx, History remains dialectical in the Hegelian sense, but only insofar as the standard Idealist formulation is inverted: *instead* of self-consciousness determining objects of thought... (paper ID: HIS.G0.03.1)

e. But exactly why I feel this way is an interesting story, and one that we covered *briefly* in class. (paper ID: PSY.G0.23.1)

f. Physically unable to perform his work related duties, he refused to return and was *consequently* placed in segregated housing. (paper ID: POL.G0.09.1)

2. There was a slight difference in the frequency count of DCs between the NNES and NES groups (i.e., *besides, to begin with, in other words, that is to say, after all, because of this, for this reason, hence, in brief*). For instance, the frequency of *besides* appeared 0.53 time per 10,000 words in the NNES group, and it appeared 1.22 times in the NES group, the difference on the frequency count of this DC in two groups was 0.69 time that was lower than the criteria of five times per 10,000 words between the NNES and NES groups, which was a

slight difference. If the frequency counts of the DCs were higher than five times per 10,000 words between two groups, this was considered not a big difference.

However, it must be emphasized that even if there was a subtle difference in the frequency count of some DCs (i.e., *nevertheless, alternatively, in contrast, conversely, to conclude, in a word, in short, and in conclusion*), they were still selected in this study for two reasons: (a) in my pilot study, some participants struggled with using *nevertheless, alternatively, in contrast, and conversely* correctly; and (b) in general, when students compose argumentative writings, they will have to write a conclusion or summary in their papers. Thus, students need to practice those DCs (i.e., *to conclude, in a word, in short, and in conclusion*) that summarize the information mentioned in the discourse.

3. In MICUSP, some DCs did not appear in the writing samples written by NES, and the frequencies of those DCs were zero (i.e., *for one thing, in any case, as a matter of fact, on the contrary, by comparison, on account of this, in consequence, and to sum up*); therefore, those DCs were excluded.

4. The frequency of the usage of DCs by NNES was more than by NES (e.g., *first of all, namely*). According to the calculation, the frequency of *first of all* appeared 0.42 time per 10,000 words in the NNES group, and the frequency of this DC was zero in the NES group; the frequency of *namely* appeared 2.08 times per 10,000 words in the NNES group, and it appeared 0.78 time per 10,000 words in the NES group. Those two DCs by NNES were used more frequently than by NES determined by the calculation; thus, those two DCs were excluded as well.

For the above reasons, the selected 35 DCs were used in the main study. The usage frequency of target DCs in NNES and NES is presented in Table 3.

Table 3. *The Usage Frequency of Target DCs in NNES and NES*

CEs	SCs	DCs	NNES	NES
			per 10,000 words	per 10,000 words
Type I: strengthening an assumption	Additive	also	29.38	276.03
		in addition	2.54	29.72
		furthermore	0.53	9.29
		moreover	0.42	6.14
	Sequencer	first	7.78	97.17
		second	1.13	49.91
		finally	0.95	26.24
		third	2.97	22.21
		next	1.51	20.17
	Appositive	for example	5.16	35.73
		for instance	0.66	11.39
		similarly	1.33	7.11
Type II: contradicting an assumption	Adversative	but	43.05	244.67
		however	39.83	159.16
		yet	21.15	42.2
		nevertheless	0.95	2.55
	Concessive	though	1.82	61.04
		although	12.14	53.49
	Alternative	or	57.88	369.88
		alternatively	0	5.11
	Corroborative	in fact	1.14	30.28
		actually	8.24	29.94
	Contrastive	on the other hand	0.57	17.72
		conversely	0	3.51
		in contrast	2.39	3.23
Type III: making contextual implications	Causation	because	11.01	196.7
		so	16.48	163.19
		then	3.52	78.77
		thus	11.38	59.26
		therefore	3.33	31.14
		as a result	3.81	25.63
	Summation	to conclude	0	2.3
		in conclusion	0	1.04
		in short	0.19	1.04
		in a word	0	0.57

Note. CEs = contextual effects; SCs = semantic categories; DCs = discourse connectives; NNES = non-native English speakers; NES = native English speakers.

As shown in Table 3, there were three main types of DCs with ten subcategories based on their semantic use and 35 DCs in total. Rankings of each DC are in accordance with the frequency counts of DCs in the NES group. The frequency count of each DC in the NES group was higher than in the NNES group, which suggests that DCs were used by NES more often than NNES. For example, the subcategory *additive* in Type I, the use of ‘also’ appeared 29.38 times per 10,000 words in the NNES group, and it appeared 276.03 times per 10,000 words in the NES group. This revealed that ‘also’ was more commonly used by NES than the NNES in argumentation.

3.4 Data Collection Procedures

Before conducting my research, the recruitment methods were approved by the UVic Human Research Ethics Board. For data collection, every participant signed a consent form following the University’s ethical guidelines (Ethical Protocol Number: 22-0103). The codes (e.g., P1 stands for Participant One) were used to safeguard the participants’ confidentiality.

The data collection was conducted by using web-based technology, which is Tencent QQ (i.e., <https://www.tencent.com>), Wenjuanxing, and Tencent Meeting. All these online tools were supported by the University where the participants were recruited. The following procedures were used. First, a Tencent QQ group was registered for this research, and the voluntary participants scanned its QR (Quick Response) code and joined this Tencent QQ group. Then, a consent form (Appendix 1) was uploaded in the Tencent QQ group. All the participants downloaded the consent forms, and then the purposes of this study were clarified to the participants following the UVic’s ethical guidelines before they signed the consent forms. After signing and emailing the consent forms, participants were requested to complete

the pre-treatment surveys on Wenjuanxing in 15 minutes. After this, for the next 40 minutes, the participants took a pre-treatment writing test on Wenjuanxing. On completion of the pre-treatment writing tests, participants were provided explicit instruction of DCs for about 90 minutes in the following four weeks by using Tencent Meeting. At the end of the treatment, as to a post-treatment writing test, the participants were asked to write a different topic of argumentative writing under the same condition as in the pre-treatment writing test. Finally, all participants individually completed the post-treatment surveys on Wenjuanxing within one week.

3.4.1 Pilot Study

Before the main study, a pilot study was implemented in order to examine the feasibility of the research design. In the pilot study, there were 15 participants who were all second-year English majors from the same university in China. Their age ranges from 18 to 20, and they spoke Mandarin Chinese as their first language. None of them have stayed in any English speaking countries. The pilot study was conducted in the classroom. Before the treatment began, the participants were provided with a consent form in which they were informed that their participation was voluntary. I also verbally explained the purposes, benefits, and confidentiality for each participant, and they were given opportunity to ask any questions about the study before signing. After I collected the participants' consent forms, they were required to answer a pre-treatment survey, including their background information and their perceptions of using DCs before the treatment. Then, a pre-test was administered to the participants. In the pre-test, the participants were asked to write an argumentation about a TEM-4 (Test for English Majors-Band 4) writing topic "*Will phones kill letter writing?*" of no

more than 200 words within 35 minutes. While collecting the pre-writing tests, the treatment that consisted of explicit instruction of 60 DCs (three main types, and 10 sub-types) began on the same week and it carried on in the following four weeks. During the treatment period, I explicitly taught the selected DCs to the participants about 90 minutes weekly. The treatment materials were tested for comprehensibility of its content. At the end of the treatment, as a post-test, the participants were asked to write another TEM-4 argumentation about the topic “*Will tourism bring harm to the environment?*” under the same condition as in the pre-test to determine their use of DCs after being exposed to explicit instruction, that is to say, to compare their writing performance at the beginning and at the end of the treatment periods. When the participants finished the post-treatment writing test, they answered a post-treatment survey within one week. For each question in the post-treatment survey, I also clarified questions to let participants share their opinions about unclear parts in the questionnaire. For data analysis, four types of data were examined qualitatively and quantitatively (i.e., pre- and post-treatment surveys, and pre- and post-treatment writing tests). The data from the pilot study were not used in the main study. Due to identifying some issues (i.e., sample size, research instruments, grading criteria and time limit, the number of DCs, and treatment venue) in the pilot study, I carried out the main study to address the issues by implementing the following modifications.

For the main study, based on the results and implementation of the pilot study, the following five modifications were conducted:

a. Sample Size. Since there were 15 participants in the pilot study, the limited sample size was too small to establish normal distribution, and it was insufficient to obtain enough statistical power. Therefore, the larger sample size (i.e., 96 participants who were divided into

three different writing proficiency levels) was employed in order to increase the chance of achieving statistically significant results.

b. Instrument Modification. In this study, some Chinese English major participants were recruited from their third year at university. However, TEM-4 is a national placement test for Chinese English majors in the end of their second year at university, which includes listening, language use, cloze, writing, and speaking. Therefore, the written examination of TEM-4 is inadequate for testing the writing proficiency of the third-year participants. Due to this reason, the TEM-4 argumentative writing prompts were changed into IELTS General Training in writing task 2 for data collection, for IELTS is an internationally recognized English standardized test for non-native English language speakers at different proficiency levels.

c. Grading Criteria and Time Limit. For the same reason mentioned in b., the grading criteria were changed and the maximum time limit for pre- and post-treatment writing tests from 35 minutes to 40 minutes so as to conform to the requirements of the argumentative writing in IELTS General Training format.

d. The Number of DCs. Considering the time limitations and feedback from the participants in the pilot study, the target 60 DCs were mainly selected from Hu and Li's (2015) study, which were changed to 35 target DCs, to ensure that the chosen 35 DCs were at the appropriate level for the first, second, and third year university participants on the basis of the book *Lexicon for English Majors* (2004). Therefore, the treatment materials were modified accordingly.

e. Treatment Venue. Due to COVID-19, the treatment was implemented by using the web-based technology rather than in the classroom because of the current restrictions at

the time stipulated by the University where the participants were recruited.

3.4.2 Main Study

With some modifications, the main study had the same research length and procedures as the pilot study: recruiting participants, pre-treatment survey procedures, pre-treatment writing test procedures, four-week treatment procedures, and post-treatment writing test and post-treatment survey procedures.

a. Recruitment. The recruitment process contains two stages. First, I showed my recruitment advertisement to potential participants with the aid of PowerPoint slides in the Tencent QQ groups of the three classes of first-year English-major students whom I taught. Then, the potential participants were requested to sign and email the consent forms to my colleague, who taught English reading to second-year English-major students, and then she kept the signed consent forms on her own computer. Therefore, I did not know who participated in my study until the treatments were completed and their grades were submitted. The potential participants and non-participants received the same instruction from me in Tencent Meeting. Second, my colleagues, who taught English reading to two second-year English-major classes, helped me release the recruitment advertisement to these second-year English-major classes' Tencent QQ groups so as to recruit potential participants. I have not taught these classes before. Then, I personally released the recruitment advertisement in the Tencent QQ groups of the two classes of third-year English-major students whom I taught previously. I was not teaching these third-year classes at that time of the study. Students from these classes had different levels of English required for this research. In this study, I registered several Tencent QQ groups for contacting the voluntary participants in this

research, who could scan the QR (Quick Response) codes and then join these Tencent QQ groups. Thus, the participants could receive every notice related to the treatment via these Tencent QQ groups.

b. Pre-Treatment Survey. Before the treatment began, participants were required to fill in a pre-treatment survey on Wenjuanxing in 15 minutes to find out the participants' backgrounds and the challenges they might have with the use of DCs in English argumentative writing.

c. Pre-Treatment Writing Test. After finishing a pre-treatment survey, participants were required to do a 40-minute pre-treatment argumentative writing test which was released on Wenjuanxing by using either their own computers, smart phones, or iPads in order to show the participants' performance on DCs in the writing domain.

d. The Four-Week Treatment. The treatment was conducted in the online classroom. All the participants received explicit instruction of DCs online by using Tencent Meeting. The explicit instruction of DCs was conducted by me in order to minimize instructor-related variables. During the explicit instruction of DCs, the reading materials and practice exercises were uploaded in the Tencent QQ group. The participants were required to download them and do the exercises. Those participants who completed their exercises in the Word document emailed me their documents to keep as evidence of their performances. For each online class, 90 minutes of explicit instruction was provided weekly. The explicit instructional process was divided into three stages (i.e., warm-up task, main task, and post-task). First of all, at the discourse level, an argumentative essay was presented to every participant and each participant circled the DCs in the given text. Upon completion, the participants compared their answers with the instructor's, and discussed the similarities and differences. Second, the

instructor introduced DCs briefly and clarified the relationship between DCs and argumentation. At the sentence level, participants discussed the different CEs between the sentences with and without DCs, as well as composed some sentences by using given DCs. Lastly, at the paragraph level, a paragraph without DCs was showed to the participants. They were asked to select appropriate DCs from a given list to complete the sentences within the paragraph. Then, the instructor directed the participants' attention to the target DCs as well as the target DCs' nature and functions.

e. Post-Treatment Writing Test and Post-Treatment Survey. After the treatment, all participants completed a different version of post-treatment argumentative writing test on Wenjuanxing within 40 minutes. My colleague administered and supervised the post-writing test. Upon completion of the post-treatment writing test, a post-treatment survey was released on Wenjuanxing to collect data pertaining to the participants' perceptions about explicit instruction of DCs and their use of DCs in English argumentative writing. They were advised to complete the post-treatment surveys on Wenjuanxing individually within one week.

3.5 Data Analysis

In this study, qualitative and quantitative methods were used in order to answer the research questions, which were to determine whether the explicit instruction of DCs had an impact on the participants' use of DCs and their overall writing performance.

3.5.1 *Qualitative Data Analysis*

a. Preparation. Before the data were analyzed, the participants' pre- and

post-treatment surveys and their argumentative writings in the pre- and post-treatment tests were downloaded from the Wenjuanxing, which were automatically transferred into Excel sheets for coding. In order to protect the anonymity of the participants during all stages of analysis, all participants' file names were assigned codes to safeguard their identity.

b. Coding. Regarding participants' perceptions of using DCs before and after treatment, I used the content analysis method to code the participants' responses in the pre- and post- treatment surveys, and a second coder was invited to independently code 30 percent of the data in order to establish inter-coder reliability. As Friedman (2012) defined, content analysis "involves coding data in a systematic way in order to discover patterns and develop well-grounded interpretations" (p. 191). In the content analysis, the stages of coding "are recursive with multiple cycles of review" (Huang, 2019, p. 10), and I followed the steps of coding data based on Huang's (2019) study. To begin with, I read through all the data many rounds to get an understanding of the data. In light of my initial readings of the pre- and post-treatment surveys, I carried out the open-coding of all qualitative data by coding "meaning units" by labeling parts ranging from a single word to a paragraph length in order to describe a specific meaning (Huang, 2019, p. 6). Through several rounds of re-checking and re-coding, some related codes were grouped as one code, and subcodes were under the grouped code. For example, when I analyzed learners' experience of using given DCs, first of all, I generated a code for each factor, such as "Code: writing." After the re-examination, I put the codes together into a code "based on skill domains," and changed the initially generated codes into subcodes. Thus, four codes and four subcodes were generated as follows:

Code: Based on skill domains

Subcode: Writing

Subcode: Speaking

Code: Based on functions

Subcode: Transition

Subcode: Denoting logical relations

Code: Other

Code: No experience

Additionally, when I analyzed learners' prior experience of being taught to use DCs, I developed a code based on a particular meaning unit, such as "Code: learning from teachers' instruction." After the re-checking, I put the codes together into a code "having experience," and changed the initially developed codes into subcodes. Thus, three codes and three subcodes were created as follows:

Code: Having experience

Subcode: Learning from teachers' instruction

Subcode: Learning from constructing sentences

Subcode: Learning from writing practice

Code: No experience

Code: Other

Thus, the generated codes were clustered into 26 subcategories, and then clustered into five categories based on common themes. The first category was about student background information. The second and third categories have connection to two research questions. The fourth and fifth categories clustered codes that did not directly associate with research questions, such as learners' suggestions about learning DCs taught by teachers

before and after treatment. The codes relevant to the first research question were clustered into Category 2, and Category 3 consisting of codes to address the fourth research question.

Each category was composed of several subcategories. For example, concerning Category 2, the following four subcategories with 14 codes were established (For the full list of codes, refer to Appendix 11). Additionally, there were 9 subcodes under some codes.

c. Establishing Inter-Coder Reliability. In order to establish inter-coder reliability, a second coder, an experienced Chinese English tutor in Applied Linguistics, independently coded 30% of student survey responses (Huang, 2019). Through discussion, we found that there were some coding disagreements owing to different interpretations of codes. For example, when coding data about differences in how DCs are used in English and Chinese from the post-treatment survey, the second coder coded one EG participant (P62)'s response "... in Chinese, if we reveal a cause and effect relation between two sentences, we usually only use two Chinese DCs, for example, 因为 ('because'), 所以 ('so'). However, in English, we can use several different English DCs to connect a cause and effect relation between two sentences, for example, 'because,' 'since,' 'so,' 'therefore,' and we should consider their different usages and use these DCs with similar meanings appropriately" as *context* because the second coder believed this student originally wanted to express when using these different English DCs with similar meanings, learners should consider the usages of DCs and use DCs properly within the contexts. However, I coded it as *usages* because I think these participants only simply stress the different usages between Chinese and English DCs at sentence level. After exchanging our opinions towards different interpretations, finally, we agreed to change "Code: context" into "Code: usages." We also realized that codes could be combined if there is substantial overlap. For example, when coding data about similarities

in how DCs are used in English and Chinese from the post-treatment surveys, the second coder coded one UIG participant (P15)'s answer "both are to connect two or more sentences; both attaches importance to inner logical relations" as *making the structure of an essay more coherent* and *logical relations*, and I coded it *logical relations*. We discussed the logic behind the codes, and we agreed that as these two codes both indicated the logic of using DCs appropriately, these two codes seemed to be overlapped and therefore were referring to using DCs appropriately in making sentences or essays more coherent, we concluded that these two codes could both come under the one code, *logical relations*. After arriving at an agreement, I reorganized the code as shown: "Code: logical relations." Regarding other codes and subcodes, we initially reached more than 90% agreement. After the discussion, we reached 100% agreement. In total, 1,056 references with 25 codes and 28 subcodes were generated (See Appendix 11).

d. Developing Themes. After having established inter-coder reliability, then, all the data was organized into categories by themes. This was done by comparing the codes that had emerged in the process of coding and clustering them in light of common themes; subcategories were developed during this process for more specific categorization (Huang, 2019). A total of five categories and 26 subcategories were developed (See Appendix 11).

e. Post-Coding Reorganization. After having established the themes based on coded data, I reorganized the list of categories/themes in an order that is related to the research questions of this study (see Section 2.5 for research questions). Figure 2 shows key categories and sample codes identified in the texts as follows (See Appendix 11 for the complete list of themes with examples from the data).

Figure 2. *A Sample of List of Themes for Coding Pre- and Post-Treatment Surveys*

<p>Category 1: Learner Background Information</p> <p>Subcategory 1: Gender</p> <p>Subcategory 2: Age</p> <p>Subcategory 3: Birthplace</p> <p>Subcategory 4: First language(s)</p> <p>Subcategory 5: Length of residence in English speaking countries</p> <p>Subcategory 6: English language learning</p>
<p>Category 2: Learners' Perceptions of Using DCs Before EI</p>
<p>Subcategory 1: Learners' perceptions of knowledge on DCs</p> <p style="padding-left: 20px;">Code: Reported known DCs</p> <p style="padding-left: 40px;">Subcode: Reported known usage of DCs</p> <p style="padding-left: 40px;">Subcode: Reported known meaning of DCs</p> <p style="padding-left: 20px;">Code: Reported unknown DCs</p> <p style="padding-left: 20px;">Code: No comment</p> <p>Subcategory 2: Learners' perceptions of using given DCs</p> <p style="padding-left: 20px;">Code: Based on skill domains</p> <p style="padding-left: 40px;">Subcode: Writing</p> <p style="padding-left: 40px;">Subcode: Speaking</p> <p style="padding-left: 20px;">Code: Based on functions</p> <p style="padding-left: 40px;">Subcode: Transition</p> <p style="padding-left: 40px;">Subcode: Denoting logical relations</p> <p style="padding-left: 20px;">Code: Other</p> <p style="padding-left: 20px;">Code: No experience</p> <p>Subcategory 3: Making appropriate sentences from the given DCs</p> <p style="padding-left: 20px;">Code: Although</p> <p style="padding-left: 20px;">Code: Because</p> <p style="padding-left: 20px;">Code: On the one hand</p> <p style="padding-left: 20px;">Code: Nevertheless</p> <p>Subcategory 4: Learners' prior experience of being taught to use DCs</p> <p style="padding-left: 20px;">Code: Having experience</p> <p style="padding-left: 40px;">Subcode: Learning from teachers' instruction</p> <p style="padding-left: 40px;">Subcode: Learning from constructing sentences</p> <p style="padding-left: 40px;">Subcode: Learning from writing practice</p> <p style="padding-left: 20px;">Code: No experience</p> <p style="padding-left: 20px;">Code: Other</p>
<p>Category 3: Learners' Perceptions of Using DCs After EI</p>
<p>Subcategory 1: Learners' experience of using learned DCs</p> <p style="padding-left: 20px;">Code: Challenges</p> <p style="padding-left: 40px;">Subcode: Unfamiliar with the logical relations between sentences and DCs</p> <p style="padding-left: 40px;">Subcode: Unfamiliar with the usage of DCs</p> <p style="padding-left: 40px;">Subcode: Insufficient knowledge of DCs</p> <p style="padding-left: 40px;">Subcode: Location of DCs</p> <p style="padding-left: 40px;">Subcode: Writing</p> <p style="padding-left: 40px;">Subcode: Other</p>

Code: Confidence

Subcode: Writing

Subcode: Understanding the usage of DCs

Subcode: Logical capability

Subcode: Reading

Subcode: Other

Subcategory 2: Improvement of English argumentative writing

Code: Logical capability

Code: Appropriate use of DCs

Code: Clear writing structure

Code: Other

Code: No improvement

Subcategory 3: Similarities and differences of using DCs in English and Chinese

Code: Similarities

Subcode: Logical relations

Subcode: Different categories

Subcode: Location of DCs

Subcode: Meaning

Code: Differences

Subcode: Usages

Subcode: Context culture

Subcode: Location of DCs

Subcode: Capitalization and lowercase

Subcategory 4: Improvement of using DCs

Code: Having improvement

Code: No improvement

Category 4: Learners' Suggestions for Teaching DCs Before EI

Subcategory 1: Providing examples

Subcategory 2: Providing exercises

Subcategory 3: Using PowerPoint presentation

Subcategory 4: Use of L1 and L2

Subcategory 5: Other

Subcategory 6: No comment

Category 5: Learners' Suggestions for Teaching DCs After EI

Subcategory 1: Providing more examples

Subcategory 2: Increasing exercises of practicing DCs

Subcategory 3: Providing interactive activities in class

Subcategory 4: EI

Subcategory 5: Integrating EI with II

Subcategory 6: No comment

3.5.2 Quantitative Data Analysis

As for the data of writing samples in the pre- and post-treatment writing tests, I

recruited two raters, who were experienced university English tutors. They independently rated all the English compositions produced by the 96 participants following the established grading criteria (Appendix 12). Each composition was labeled with a participant number without revealing any information about the writer's name and week. As per the standardized criteria, half points could be used. In other words, for each sample of the students' argumentative writings, when the difference between the two scores given by the two raters was .5, the final grade of the written text was calculated by the mean of the two scores. If the grade difference was more than .5, the two raters then discussed their disagreement until they reached an agreement on the final score. The inter-rater reliability was checked by using the Spearman's *rho* test that examined the strength of the relationship between the two raters' scores (Çetin, 2011). The Spearman's *rho* test showed that there were statistically significant correlations between the two raters in the pre-treatment writing test scores ($r_s = .920, p = .000$) and the post-treatment writing test scores ($r_s = .895, p = .000$), for a correlation between 0.70-1.00 is considered as a high correlation in social sciences (Büyüköztürk, 2009). Therefore, the findings revealed that the reliability of the two raters in assessment were highly acceptable and consistent in scoring.

To address Research Question 2 about examining whether the explicit instruction of DCs made any difference in the three groups' use of DCs in their argumentative writings and to what extent, I first obtained the descriptive statistics by examining the frequency and appropriateness of participants' use of DCs in the pre- and post-treatment writing tests as shown in Tables 9 and 11. Guided by AlHassan and Wood's (2015) definition, the frequency referred to the total number of the target DCs being used regardless of their multiple usages. Using Excel, I entered the counts of the DCs that the participants use in the pre- and

post-treatment writing tests. To count the appropriate use of DCs in the compositions, an English tutor, who also was one of the raters in evaluating the written data, and I coded the participants' writings based on the classification of the appropriate use and misuse of DCs proposed by Kanno (1989) (i.e., appropriate use of connectives [AC], wrong choice of connectives [WC], redundant connectives [RC], and miscellaneous [M]). (Refer to Figure 3). The appropriate use and misuse of DCs were underlined. We established inter-coder reliability by discussing any disagreements in coding decisions until we achieve 100% agreement.

Figure 3. *The Classification of the Appropriate Use and Misuse of DCs*

Category	Definition	Examples
AC	The connective is correctly and logically used in the transition between sentences.	<u>For one thing</u> , we feel relaxed, <u>for another</u> , we can expand our horizons.
WC	The connective correctly describes the connection between sentences; however, it sounds inappropriate and should be replaced with another connective of the same connective type.	<u>In a word</u> , phone is very useful, but we shouldn't forget our native language. We should write more letters.
RC	The connection between sentences is so obvious that it does not require any connective.	We all know phones are more convenient than letter writing, it can save much time for us. <u>But</u> I think many Chinese have some feelings about letter writing.
M	Connectives that do not fall into any of the types above, especially those that are difficult to evaluate because the previous or the following sentence does not make sense.	<u>To the begin</u> , we may feel so tired in our working time.

Note. AC = appropriate use of connectives; WC = wrong choice of connectives; RC = redundant connectives; M = miscellaneous.

For statistical analysis, both Statistical Package for Social Sciences (SPSS, Version 26) and Microsoft Excel 2016 were used. Before conducting statistical analysis to answer Research Questions 2 and 3, a normality K-S test was conducted to determine the appropriate statistical tests to use. The null hypothesis of the K-S test is that the data distributions are

normal. When the p -value is less than .05, the null hypothesis is rejected (i.e., the data are not normally distributed); when the p -value is more than .05, the null hypothesis is retained, and thus the data were normally distributed.

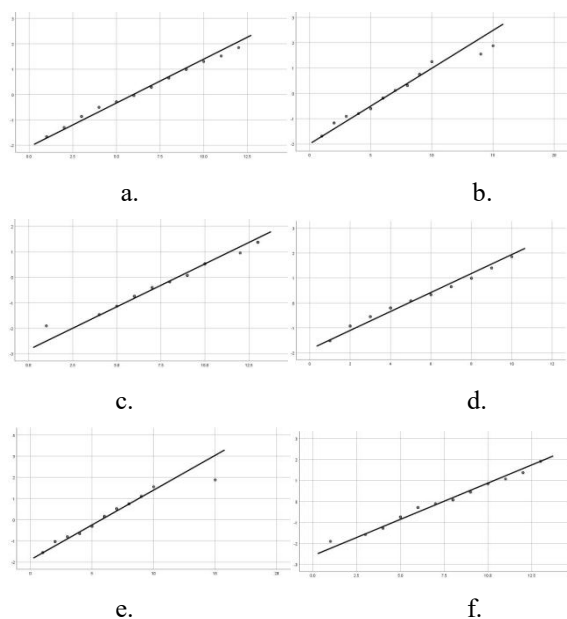
In order to examine whether or not there were any differences in each group's frequency and appropriateness of using DCs as well as their writing performance between the pre- and post-treatment writing tests, a paired-sample t -test and a Wilcoxon test were considered to be conducted. When the data showed normal distribution ($p > .05$), a paired-samples t -test was performed for each group to compare the pre- and post-treatment writing tests. When the data showed non-normal distribution ($p < .05$), a Wilcoxon test was conducted for each group's analysis. Table 4 shows the K-S test results.

Table 4. *Tests of Normality*

Variable		<i>n</i>	Kolmogorov-Smirnov test		
			Statistic	<i>df</i>	<i>Sig.</i>
Post-frequency	EG	30	.114	30	.200
	IG	32	.120	32	.200
	UIG	34	.124	34	.200
Post-appropriateness	EG	30	.134	30	.180
	IG	32	.124	32	.200
	UIG	34	.135	34	.117

Note. $N = 96$. EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group.

Table 4 shows that the data follow a normal distribution ($p > .05$), for the post-frequency and the post-appropriateness in each group. To display the distribution of the data, Q-Q plots are provided in Figure 4. If the data are distributed normally, the points will lie on the 45-degree reference line. If the data are not distributed normally, the points will deviate from the reference line ("Examining Data Distributions Using Q-Q Plots," n. d.).

Figure 4. *Q-Q Plots for Normality Tests in Table 4*

- a. EG for post-frequency
- b. IG for post-frequency
- c. UIG for post-frequency
- d. EG for post-appropriateness
- e. IG for post-appropriateness
- f. UIG for post-appropriateness

Note. EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group.

Therefore, the parametric tests were used in the statistical analysis. To address Research Question 2, a paired-samples *t*-test was used to identify if there was a significant difference in the frequency and appropriateness of the usage of the target DCs and writing performance before and after the treatment period. To address Research Question 3 regarding the relationship among the three groups' appropriate use of DCs and their writing performance, I used Pearson correlation coefficient to determine the correlations between participants' appropriate use of DCs and their writing scores at three different writing proficiency levels.

Chapter 4: Results

This chapter reports the results of the main study to address the research questions about participants' use of DCs and their writing performance across different writing proficiency levels. Sections 4.1 to 4.4 describe the results of research questions 1, 2, 3, and 4. The last section makes a summary about this chapter.

4.1 Reported Challenges of Employing DCs in Argumentative Writing

This section addresses the first research question: *What are the challenges perceived by Chinese EFL learners across different writing proficiency levels when they employ DCs in argumentative writing?* To understand the participants' challenges when they used DCs in English argumentative writing, each group answered five open-ended questions in the pre-treatment survey (Appendix 2). Table 5 presents the percentage of the perception of knowledge on DCs reported by participants from EG, IG, and UIG in question 9 (i.e., *What do you know about words and phrases such as: 'although,' 'because,' 'nevertheless,' 'on the one hand'?*).

Table 5. *Percentage of the Perception of Knowledge on DCs Reported by Participants*

Description of item	EG (n = 30)		IG (n = 32)		UIG (n = 34)	
	n	%	n	%	n	%
Reported known DCs	25	83%	27	84%	33	97%
Reported known usage of DCs	8	27%	10	31%	24	71%
Reported known	17	56%	17	53%	9	26%

meaning of DCs						
Reported unknown DCs	2	7%	4	13%	1	3%
No comment	3	10%	1	3%	0	0%

Note. $N = 96$. EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group.

As shown in the Table 5, according to the perception of knowledge on DCs reported by EG, IG, and UIG participants, their answers are classified into three main categories (i.e., reported known DCs, reported unknown DCs, and no comment). For one thing, more than 80% of the participants across groups reported that they knew the DCs such as ‘*although*,’ ‘*because*,’ ‘*nevertheless*,’ ‘*on the one hand*.’ Under this category, there were two sub-categories that could be further classified according to their report, that is, reported known usage of DCs and reported known meaning of DCs. Eight EG participants (27%), ten IG Participants (31%), and 24 UIG participants (71%) mentioned that they knew the usage of DCs. These participants perceived that those DCs were conjunctions which could indicate different logical relations among sentences. For example, one IG participant reported:

Excerpt 1: “although 表让步, because 表因果, nevertheless 表转折。” (P67)

[Translation: “‘*although*’ indicates concession, ‘*because*’ indicates cause and effect, ‘*nevertheless*’ indicates adversative.”]

Further, 17 EG participants (56%), 17 IG participants (53%), and nine UIG participants (26%) reported that they knew the meaning of DCs. According to their report, many participants in each group could write down the equivalent Chinese meanings of the DCs.

For another, there were two EG participants (7%), four IG participants (13%), and one UIG participant (3%) who reported that they did not know some of the DCs. Last, in the “no comment” category, three EG participants (10%) and one IG participant (3%) did not make

any comments about these DCs at all. Therefore, as shown in Table 5, regarding reported known usage and meaning of DCs, it seemed that there were more UIG participants who knew the DCs than EG and IG participants.

Second, as to the participants' experience about using these DCs in question 10 (i.e., *What's your experience when you use 'although,' 'because,' 'nevertheless,' 'on the one hand?'*), EG, IG, and UIG participants shared their different perceptions about this question. According to the participants' report, their answers could be classified into four categories, that is, based on skill domains, functions, other, and no experience.

Table 6. *Percentage of Using Given DCs Experienced by Participants*

Description of item	EG (<i>n</i> = 30)		IG (<i>n</i> = 32)		UIG (<i>n</i> = 34)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Based on skill domains	14	47%	13	41%	12	35%
Writing	11	37%	10	31%	10	29%
Speaking	3	10%	3	10%	2	6%
Based on functions	4	13%	7	22%	15	44%
Transition	3	10%	5	16%	8	24%
Denoting logical relations	1	3%	2	6%	7	20%
Other	5	17%	8	25%	7	21%
No experience	7	23%	4	12%	0	0%

Note. *N* = 96. EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group.

Table 6 shows the percentage of using given DCs experienced by the participants across groups. There were more than 35% of the participants in each group used given DCs based on different skill domains, such as writing (EG = 37%; IG = 31%; UIG = 29%) and speaking (EG = 10%; IG = 10%; UIG = 6%). Further, more than 10% of the EG and IG

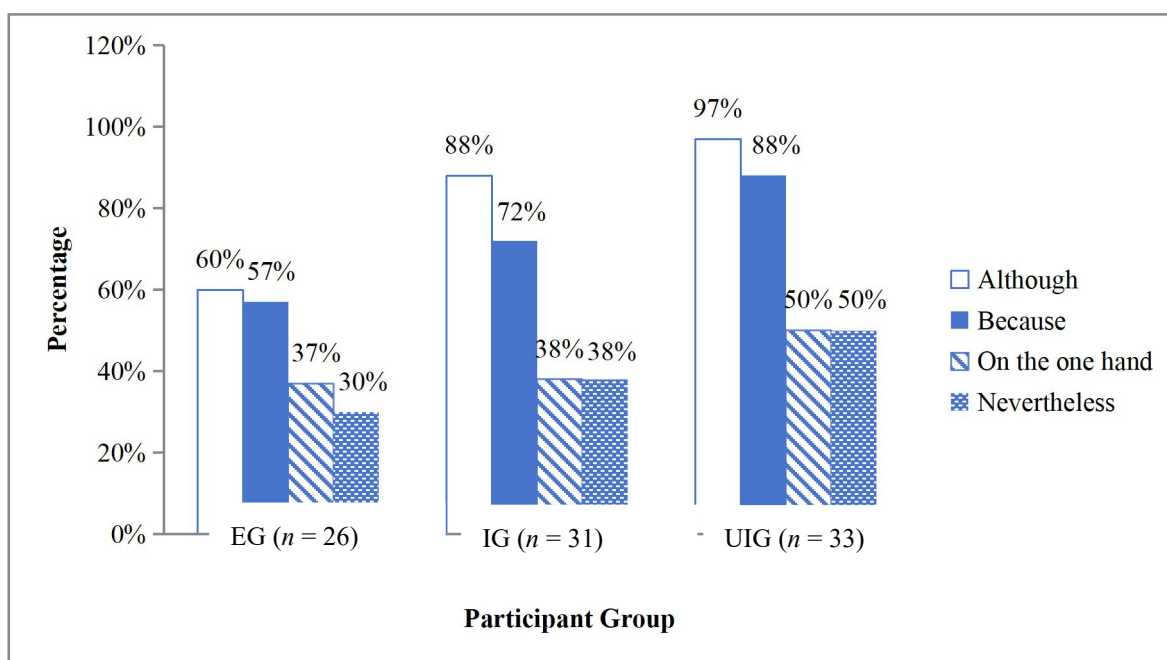
participants, and more than 40% of the UIG participants used DCs based on different functions. For example, three EG participants (10%), five IG participants (16%), and eight UIG participants (24%) perceived that the given DCs have a transitional function to link different sentences and make writing more coherent; one EG participant (3%), two IG participant (6%), and seven UIG participants (20%) conveyed that the given DCs denoted logical relations (e.g., concessive, causation, adversative, and contrastive) between the previous clause(s) and the next one. What is more, in the “other” category, five EG participants (17%), eight IG participants (25%), and seven UIG participants (21%) did not answer this question clearly. For example, one EG participant (P63) reported that she could use most of the given DCs, one IG participant (P12) perceived that he could use given DCs very well, and three UIG participants (P6, P53, and P68) briefly expressed that they used given DCs in English classes or tests. Finally, before the treatment, seven EG participants (23%) and four IG participants (12%) did not have any experience using given DCs, and all UIG participants had experienced using given DCs before.

To conclude, less than 50% of the participants across groups had experience using given DCs in different skill domains, while UIG participants had more experience using given DCs than EG and IG participants based on different functions. Last, several EG and IG participants did not have any experience using given DCs.

Third, the most noticeable tendency revealed the answers of question 11 (i.e., *Can you make four sentences respectively by using the following words? 1. although; 2. because; 3. nevertheless; and 4. on the one hand*) as presented in Figure 5 is that more than 85% of the EG, IG, and UIG participants had capability of using given DCs to make appropriate sentences which were marked by the researcher herself and another English tutor. To be

specific, first, more than 60% of the participants across groups could use ‘*although*.’ Second, more than 50% of the participants in each group could use ‘*because*’ to make appropriate sentences. Third, no more than 50% of the participants across groups could use ‘*on the one hand*’ and ‘*nevertheless*’ to compose appropriate sentences. Last, four EG participants (13%), one IG participant (3%) and one UIG participant (3%) did not use given DCs to make any sentences at all, and therefore they were not included in Figure 5. Those inappropriate sentences were identified by the two raters based on Kanno’s (1989) research (see Figure 3). For example, one EG participant (P34) wrote “Although tired, but I think they value.” One IG participant (P145) wrote “Because it is important to do more exercise.” One UIG participant (P15) wrote “Nevertheless, she deserved to be.” To summarize, it can be seen that it is comparatively easier for EG, IG, and UIG participants to use ‘*although*’ and ‘*because*’ to make appropriate sentences than to use ‘*on the one hand*’ and ‘*nevertheless*.’

Figure 5. *Percentage of Making Appropriate Sentences from the Given DCs*



Note. EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group.

Fourth, when it comes to addressing question 12 (i.e., *Were you taught to use discourse connectives in English writing class? If you were, how were you taught to use discourse connectives?*), Table 7 shows whether the participants in each group have experience being taught to use DCs in English writing class. Their report could be divided into three categories: having experience, no experience, and other. More than 40% of the participants across groups had experience of being taught to use DCs in English writing class. Particularly, there were more EG and IG participants who had experience of learning DCs from teachers' instruction than the UIG participants. Further, there were more UIG participants who had experience of learning DCs from constructing sentences than the EG and IG participants. It is notable that less than 20% of the participants across groups had experience of learning DCs from writing practice. Next, there were more EG and IG participants who had no experience of learning DCs than the UIG participants in English writing class. Last, in the "other" category, no more than 20% of the participants from each group conveyed that they could not remember whether they had being taught in English writing class or not. To sum up, EG and IG participants were inclined to learn DCs by teachers' instruction, and UIG participants themselves tended to learn DCs by constructing sentences.

Table 7. *Percentage of Participants' Prior Experience of Being Taught to Use DCs*

Description of item	EG (<i>n</i> = 30)		IG (<i>n</i> = 32)		UIG (<i>n</i> = 34)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Having experience	12	40%	16	50%	21	62%
Learning from teachers' instruction	6	20%	7	22%	4	12%
Learning from	2	7%	5	16%	12	35%

constructing sentences						
Learning from writing practice	4	13%	4	12%	5	15%
No experience	12	40%	10	31%	6	18%
Other	6	20%	6	19%	7	20%

Note. $N = 96$. EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group; DCs = Discourse Connectives.

Last, with regard to question 13 (i.e., *In what ways do you think your teachers can help you learn discourse connectives in English writing class?*), as shown in Table 8, there were seven noticeable perspectives reported by participants across groups: (a) more than 35% of the participants in each group conveyed that teachers could provide examples to analyze the logical relations among sentences, explaining how to use DCs appropriately between sentences or paragraphs; (b) more than 20% of the participants across groups suggested that teachers could provide some exercises in order to help them learn new DCs and practice DCs they already know, such as making sentences with the given DCs (UIG participant, P84), and practicing DCs by speaking (IG participant, P47) or by writing (EG participant, P77); (c) there were two EG participants (7%) and one IG participant (3%) indicated that teachers could use PowerPoint presentation to instruct DCs with videos or pictures; (d) there were one IG participant (3%) and two UIG participants (6%) preferred teachers to instruct DCs by using L1 and L2 in class; (e) in the “other” category, there were three EG participants (10%), one IG participant (3%) and two UIG participants (6%) who answered the question 13 ambiguously; and (f) there were five EG participants (17%), seven IG participants (22%), and one UIG participant (3%) who did not share any ideas about their preferred teaching approaches or methods to learning DCs. All in all, many of the participants across groups proposed to learn DCs by providing examples or exercises from teachers, a few EG and IG

participants hoped to learn DCs from teachers' PowerPoint presentation, and several IG and UIG participants preferred to learn DCs from teachers' instruction with using L1 and L2. In this study, the design of the explicit instruction was informed by the results from the pre-treatment survey (e.g., providing examples and exercises, using PowerPoint presentations, and clarifying DCs in both English and Chinese).

Table 8. *Percentage of Preferred Teaching Approaches to Learning DCs Before EI*

Description of item	EG (<i>n</i> = 30)		IG (<i>n</i> = 32)		UIG (<i>n</i> = 34)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Providing examples	13	43%	12	38%	16	47%
Providing exercises	7	23%	10	31%	13	38%
Using PowerPoint presentation	2	7%	1	3%	0	0%
Use of L1 and L2	0	0%	1	3%	2	6%
Other	3	10%	1	3%	2	6%
No comment	5	17%	7	22%	1	3%

Note. *N* = 96. EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group; DCs = Discourse Connective; L1 = First Language; L2 = Second Language.

4.2 Effects of Explicit Instruction of DCs on Using DCs and Writing Performance

This section addresses the second research question: *Does explicit instruction of DCs improve the use of DCs and writing performance in argumentative writing by Chinese EFL learners across different writing proficiency levels? To what extent?* To answer this question, I conducted a paired-samples *t*-test to examine the differences in the frequency and appropriateness of using DCs as well as writing performance across groups between the pre- and post-treatment writing tests.

4.2.1 Effects of Explicit Instruction of DCs on Using DCs

In order to examine the effects of explicit instruction of DCs on each group's frequency and appropriateness of the usage of target DCs in their argumentative writings, the data were analyzed statistically. Measures of frequency and appropriateness were computed from the scores of the evaluation of the pre- and post-treatment writing tests. A paired-sample *t*-test was conducted to determine the differences in the frequency and appropriateness of using DCs across groups between the pre- and post-treatment writing tests.

Table 9. *Descriptive Statistics for the Frequency of Using DCs Across Groups*

Group	Pre-treatment writing test					Post-treatment writing test				
	<i>n</i>	Min	Max	<i>M</i>	<i>SD</i>	<i>n</i>	Min	Max	<i>M</i>	<i>SD</i>
EG	30	0	6	2.80	1.42	30	1	12	5.97	2.90
IG	32	1	9	5.13	2.12	32	1	15	6.69	3.35
UIG	34	1	11	5.38	2.41	34	1	13	8.44	2.98

Note. *N* = 96. EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group.

As shown in the Table 9, the participants across groups tended to use more DCs in the post-test (EG: *M* = 5.97, *SD* = 2.90; IG: *M* = 6.69, *SD* = 3.35; UIG: *M* = 8.44, *SD* = 2.98) compared to what they had used in the pre-treatment writing test (EG: *M* = 2.80, *SD* = 1.42; IG: *M* = 5.13, *SD* = 2.12; UIG: *M* = 5.38, *SD* = 2.41). Table 10 also shows that in EG, IG, and UIG, there are larger *SD* values in the post-treatment writing test compared with *SD* values in the pre-treatment writing test. In other words, the number of the frequent use of DCs that EG, IG, and UIG participants got in the post-treatment writing test is more varied than the number

of the frequent use of DCs that EG, IG, and UIG participants got in the pre-treatment writing test.

Table 10. *A Paired-Sample t-Test for the Frequency of Using Three Types of DCs*

DCs	EG (<i>n</i> = 30)			IG (<i>n</i> = 32)			UIG (<i>n</i> = 34)		
	<i>M</i> (<i>SD</i>)	<i>t</i>	<i>p</i>	<i>M</i> (<i>SD</i>)	<i>t</i>	<i>p</i>	<i>M</i> (<i>SD</i>)	<i>t</i>	<i>p</i>
Type I	-1.500 (1.526)	-5.385	.000***	-1.781 (1.827)	-5.515	.000***	-2.088 (2.021)	-6.026	.000***
Type II	-.667 (1.788)	-2.043	.050	-1.063 (2.169)	2.771	.009**	-.118 (2.199)	-.312	.757
Type III	-1.000 (1.509)	-3.631	.001**	-.813 (1.306)	-3.519	.001**	-.912 (2.314)	-2.297	.028*
Frequency (Total)	-3.167 (2.925)	-5.929	.000***	-1.563 (3.047)	-2.901	.007**	-3.059 (2.923)	-6.103	.000***

Note. *N* = 96. DCs = Discourse Connectives; EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group.

p* < .05. *p* < .01. ****p* < .001.

Further, Table 10 shows that there are statistically significant differences for the total frequency of using DCs between the two tests across groups (EG: *M* = -3.167, *SD* = 2.925, *t* = -5.929, *p* < .001; IG: *M* = -1.563, *SD* = 3.047, *t* = -2.901, *p* < .01; UIG: *M* = -3.059, *SD* = 2.923, *t* = -6.103, *p* < .001). When it comes to the frequency of using Type I DCs (e.g., *in addition*, *finally*, and *similarly*), Table 10 presents statistically significant differences between the two tests across groups (EG: *M* = -1.500, *SD* = 1.526, *t* = -5.385, *p* < .001; IG: *M* = -1.781, *SD* = 1.827, *t* = -5.515, *p* < .001; UIG: *M* = -2.088, *SD* = 2.021, *t* = -6.026, *p* < .001). As for the frequency of using Type II DCs (e.g., *nevertheless*, *although*, *or*, *in fact*, and *on the other hand*), there is a statistically significant difference between the two tests in IG (*M* =

-1.063, $SD = 2.169$, $t = 2.771$, $p < .01$). However, there are no statistically significant differences in EG ($M = -.667$, $SD = 1.788$, $t = -2.043$, $p = .050$) and UIG ($M = -1.118$, $SD = 2.199$, $t = -.312$, $p = .757$). Last, regarding to the frequency of using Type III DCs (e.g., *because* and *to conclude*), there are statistically significant differences between the two tests across groups (EG: $M = -1.000$, $SD = 1.509$, $t = -3.631$, $p < .01$; IG: $M = -.813$, $SD = 1.306$, $t = -3.519$, $p < .01$; UIG: $M = -.912$, $SD = 2.314$, $t = -2.297$, $p < .05$).

Table 11. *Descriptive Statistics for the Appropriateness of Using DCs Across Groups*

Group	Pre-treatment writing test					Post-treatment writing test				
	<i>n</i>	Min	Max	<i>M</i>	<i>SD</i>	<i>n</i>	Min	Max	<i>M</i>	<i>SD</i>
EG	30	0	5	2.10	1.40	30	1	10	4.90	2.63
IG	32	1	9	4.41	2.09	32	1	15	5.75	3.05
UIG	34	0	9	4.26	2.25	34	1	13	7.47	2.89

Note. $N = 96$. EG = Elementary Group; IG = Intermediate Group; UIG = Upper intermediate Group.

Table 11 shows an increase in the mean scores for the evaluation of the number of the appropriate use of DCs in EG, IG and UIG for the pre-treatment writing test (EG: $M = 2.10$, $SD = 1.40$; IG: $M = 4.41$, $SD = 2.09$; UIG: $M = 4.26$, $SD = 2.25$), and for the post-treatment writing test (EG: $M = 4.90$, $SD = 2.63$; IG: $M = 5.75$, $SD = 3.05$; UIG: $M = 7.47$, $SD = 2.89$). In Table 11, it also can be seen that in EG, IG, and UIG, SD values are larger in the post-treatment writing test than SD values in the pre-treatment writing test. That is to say, the number of the appropriate use of DCs that EG, IG, and UIG participants got in the post-test is more varied than the number of the appropriate use of DCs that EG, IG, and UIG participants

in the pre-treatment writing test.

Table 12. *A Paired-Sample t-Test for the Appropriateness of Using Three Types of DCs*

DCs	EG (<i>n</i> = 30)			IG (<i>n</i> = 32)			UIG (<i>n</i> = 34)		
	<i>M</i> (<i>SD</i>)	<i>t</i>	<i>p</i>	<i>M</i> (<i>SD</i>)	<i>t</i>	<i>p</i>	<i>M</i> (<i>SD</i>)	<i>t</i>	<i>p</i>
Type I	-1.367 (1.426)	-5.250	.000***	-1.688 (1.822)	-5.240	.000***	-2.000 (1.954)	-5.968	.000***
Type II	-.533 (1.655)	-1.765	.088	-1.063 (1.740)	3.454	.002**	-.147 (1.972)	-.435	.666
Type III	-.900 (1.583)	-3.113	.004**	-.719 (1.276)	-3.187	.003**	-1.059 (1.757)	-3.514	.001**
<i>Appropriateness</i> (Total)	-2.800 (2.999)	-5.114	.000***	-1.344 (2.980)	-2.551	.016*	-3.206 (2.911)	-6.423	.000***

Note. *N* = 96. DCs = Discourse Connectives; EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group.

p* < .05. *p* < .01. ****p* < .001.

Table 12 shows that there are statistically significant differences for the total appropriateness of using DCs between the two tests across groups (EG: *M* = -2.800, *SD* = 2.999, *t* = -5.114, *p* < .001; IG: *M* = -1.344, *SD* = 2.980, *t* = -2.551, *p* < .05; UIG: *M* = -3.206, *SD* = 2.911, *t* = -6.423, *p* < .001). To further explore the degree of differences, EG, IG, and UIG portray changes on the appropriateness of using three types of DCs. First of all, Table 12 shows that there are statistically significant differences for the appropriateness of using Type I DCs (e.g., *in addition*, *finally*, and *similarly*) between the two tests across groups (EG: *M* = -1.367, *SD* = 1.426, *t* = -5.250, *p* < .001; IG: *M* = -1.688, *SD* = 1.822, *t* = -5.240, *p* < .001; UIG: *M* = -2.000, *SD* = 1.954, *t* = -5.968, *p* < .001). Second, as for the appropriateness of using Type II DCs (e.g., *nevertheless*, *although*, *or*, *in fact*, and *on the other hand*), compared

with the post-test, there are no statistically significant differences between the two tests in EG ($M = -.533$, $SD = 1.655$, $t = -1.765$, $p = .088$) and UIG ($M = -.147$, $SD = 1.972$, $t = -.435$, $p = .666$). However, there is a statistically significant difference of the appropriateness of using Type II DCs in IG ($M = -1.063$, $SD = 1.740$, $t = 3.454$, $p < .01$). Last, regarding the appropriate use of Type III DCs (e.g., *because* and *to conclude*), in contrast with the post-test, there are statistically significant differences between the two tests across groups (EG: $M = -.900$, $SD = 1.583$, $t = -3.113$, $p < .01$; IG: $M = -.719$, $SD = 1.276$, $t = -3.187$, $p < .01$; UIG: $M = -1.059$, $SD = 1.757$, $t = -3.514$, $p < .01$).

4.2.2 Effects of Explicit Instruction of DCs on Writing Performance

A paired-samples *t*-test was conducted to determine the differences on EG, IG, and UIG participants' writing performance between the pre- and post-treatment writing tests. Table 13 provides the descriptive statistics of English argumentative writing scores across groups in the pre- and post-treatment writing tests. The slight increase is in the mean scores in EG (pre-treatment writing test: $M = 3.37$, $SD = 0.22$, post-treatment writing test: $M = 4.07$, $SD = 0.85$) and IG (pre-treatment writing test: $M = 4.45$, $SD = 0.15$, post-treatment writing test: $M = 4.78$, $SD = 0.67$), but the mean scores decrease in UIG (pre-treatment writing test: $M = 5.53$, $SD = 0.41$, post-treatment writing test: $M = 5.46$, $SD = 0.75$).

Table 13. *Descriptive Statistics for Writing Scores Across Groups*

Group	Pre-treatment writing test					Post-treatment writing test				
	<i>n</i>	Min	Max	<i>M</i>	<i>SD</i>	<i>n</i>	Min	Max	<i>M</i>	<i>SD</i>
EG	30	3.0	3.5	3.37	0.22	30	2.5	6.0	4.07	0.85
IG	32	4.0	4.5	4.45	0.15	32	3.0	6.0	4.78	0.67

UIG	34	5.0	6.5	5.53	0.41	34	3.0	7.0	5.46	0.75
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Note. $N = 96$. EG = Elementary Group; IG = Intermediate Group; UIG = Upper intermediate Group.

Table 14 shows that there are statistically differences for the writing scores between the pre- and post-treatment writing tests in EG ($M = -.700$, $SD = .794$, $t = -4.826$, $p < .001$) and IG ($M = -.328$, $SD = .679$, $t = -2.732$, $p < .05$). However, there is no statistically significant difference for the writing scores between the two tests in UIG ($M = -.074$, $SD = .730$, $t = -.588$, $p = .561$).

Table 14. *A Paired-Sample t-Test for Writing Scores*

	EG ($n = 30$)			IG ($n = 32$)			UIG ($n = 34$)		
	M (SD)	t	p	M (SD)	t	p	M (SD)	t	p
Writing scores	-.700 (.794)	-4.826	.000***	-.328 (.679)	-2.732	.010*	-.074 (.730)	.588	.561

Note. $N = 96$. EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group.

* $p < .05$. *** $p < .001$.

4.3 Relationships Between the Appropriateness of Using DCs and Writing Performance

This section addresses the third research question: *What is the relationship between the appropriate use of DCs and writing performance among Chinese EFL learners across different writing proficiency levels after receiving explicit instruction?* A Pearson correlation test was conducted to examine the relationships between the total appropriateness of using DCs and the participants' argumentative writing scores in the pre- and post-treatment writing tests across groups (i.e., whether participants with higher writing scores would have more appropriate use of DCs). In Table 15, the results show that in the pre-treatment writing test,

there are no statistically significant correlations between the total appropriateness of using DCs and the participants' writing scores in EG ($r = .154, p = .418$) and IG ($r = -.249, p = .170$). However, there is a statistically significant positive correlation between the total appropriateness of using DCs and the participants' writing scores in UIG ($r = .374, p < .05$).

Category-wise, in Type I DCs (e.g., *in addition, finally, and similarly*), there are no statistically significant correlations between the appropriateness of using DCs and the participants' writing scores in EG ($r = -.148, p = .436$) and UIG ($r = .173, p = .328$). In contrast, the correlation between the appropriateness of using DCs and the participants' writing scores in IG is statistically significant ($r = -.446, p < .05$). Next, in Type II DCs (e.g., *nevertheless, although, or, in fact, and on the other hand*), there are no statistically significant correlations between the appropriateness of using DCs and the participants' writing scores in EG ($r = .247, p = .188$), IG ($r = -.076, p = .678$), and UIG ($r = .296, p = .089$). Last, in Type III DCs (e.g., *because and to conclude*), there are no statistically significant correlations between the appropriateness of using DCs and the participants' writing scores in EG ($r = .033, p = .865$), IG ($r = -.011, p = .953$), and UIG ($r = .202, p = .251$).

In the post-test results, statistically significant positive correlations are found between the total appropriateness of using DCs and the participants' writing scores in EG ($r = .459, p < .05$) and UIG ($r = .365, p < .05$), and between the appropriateness of using DCs and IG participants' writing scores ($r = .403, p < .05$) in Type II DCs (e.g., *nevertheless, although, or, in fact, and on the other hand*). However, there are no statistically significant correlations between the total appropriateness of DCs and the participants' writing scores in IG ($r = .240, p = .185$), between the appropriateness of DCs and the participants' writing scores in EG ($r = .274, p = .143$), IG ($r = .197, p = .279$), and UIG ($r = .304, p = .080$) in Type I DCs (e.g., *in*

addition, finally, and similarly), between the appropriateness of DCs and the participants' writing scores in EG ($r = .311, p = .094$) and UIG ($r = .059, p = .741$) in Type II DCs (e.g., *nevertheless, although, or, in fact, and on the other hand*), and between the appropriateness of using DCs and the participants' writing scores in EG ($r = .245, p = .191$), IG ($r = -.080, p = .661$) and UIG ($r = .249, p = .155$) in Type III DCs (e.g., *because and to conclude*).

Table 15. *Pearson's Correlation Between the Appropriateness of Using DCs and Writing Scores*

			EG	IG	UIG
			($n = 30$)	($n = 32$)	($n = 34$)
Pre-treatment writing test	Type I	Correlation Coefficient	-.148	-.446*	.173
		Sig. (2 - tailed)	.436	.010	.328
	Type II	Correlation Coefficient	.247	-.076	.296
		Sig. (2 - tailed)	.188	.678	.089
	Type III	Correlation Coefficient	.033	-.011	.202
		Sig. (2 - tailed)	.865	.953	.251
Appropriateness (Total)	Correlation Coefficient	.154	-.249	.374*	
	Sig. (2 - tailed)	.418	.170	.029	
Writing scores	Type I	Correlation Coefficient	.274	.197	.304
		Sig. (2 - tailed)	.143	.279	.080
	Type II	Correlation Coefficient	.311	.403*	.059
		Sig. (2 - tailed)	.094	.022	.741
	Type III	Correlation Coefficient	.245	-.080	.249
		Sig. (2 - tailed)	.191	.661	.155

Appropriateness (Total)	Correlation Coefficient	.459*	.240	.365*
	<i>Sig.</i> (2 - tailed)	.011	.185	.034

Note. $N = 96$. EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group.

* $p < .05$.

4.4 Perceived Helpfulness of Explicit Instruction of DCs

This section addresses the fourth research question: *How do Chinese EFL learners across different writing proficiency levels perceive the effectiveness of explicit DC instruction in addressing their argumentative writing challenges?* The fourth research question was explored through analysis of the post-treatment survey. There were four open-ended questions to identify whether the participants perceived that the explicit instruction of DCs helped them overcome their writing challenges. To address the first open-ended question (i.e., *Please share with me your experience about using the discourse connectives learned during this study. a. What aspects of using the discourse connectives do you find challenging? b. In what aspects of the use of the discourse connectives do you find that you have gained confidence?*), the participants across groups shared their experiences about using learned DCs during this study. First, Table 16 shows the percentage of challenges of using learned DCs in the study. Some challenges reported by the participants are as follows: (a) more than 40% of the participants in each group found that it was hard for them to identify the logical relations of the given DCs inside sentences or context if they misunderstood the given sentences or context; thus, they could not choose appropriate DCs when doing exercises; (b) it was challenging for 11 EG participants (37%), six IG participants (19%), and five UIG participants (14%) to master varied usage of the given DCs, especially when they were

required to do some exercises for choosing the given DCs with similar meanings; (c) more than 10% of the participants in each group did not have sufficient knowledge of the given DCs, and thus some of them did not understand the meaning of the given DCs. Therefore, they always used some common DCs in English writing; (d) three IG participants (9%) and four UIG participants (12%) were uncertain about where the DCs were located in the sentences; (e) there was one EG participant (3%) and two IG participants (6%) who perceived that it was difficult to use DCs in writing; and (f) in the “other” category, one EG participant (3%) and three IG participants (9%) did not answer this question directly and their answers were very vague.

Table 16. *Percentage of Challenges of Using Learned DCs*

Description of item	EG (<i>n</i> = 30)		IG (<i>n</i> = 32)		UIG (<i>n</i> = 34)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Unfamiliar with the logical relations between sentences and DCs	12	40%	14	44%	21	62%
Unfamiliar with the usage of DCs	11	37%	6	19%	5	14%
Insufficient knowledge of DCs	5	17%	4	13%	4	12%
Location of DCs	0	0%	3	9%	4	12%
Writing	1	3%	2	6%	0	0%
Other	1	3%	3	9%	0	0%

Note. *N* = 96. EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group; DCs = Discourse Connectives.

From the above results, it can be seen that there are still some challenges for the participants across groups using DCs in this study, as many of them do not have a complete

understanding of the logical relations between the sentences and DCs.

Additionally, in Table 17, the results show that many participants across groups gain confidence in using DCs. First, after four weeks of learning DCs, 50% of the participants in both EG and IG perceived that they made some improvements on their writing, and 13 UIG participants (38%) reported that they made progress in their writing. For example, one IG participant stated:

Excerpt 2: “写作议论文方面有了很大的信心，更多使用话语联系语，使文章有条理性有结构，写出文章观点一目了然。” (P60)

[Translation: “I have gained great confidence in writing argumentation, using more DCs to make writing coherent, well-structured, and with clear and easily identifiable arguments.”]

Second, five EG participants (17%), five IG participants (16%), and 11 UIG participants (32%) reported that learning three types of DCs helped them better understand the usage of DCs. Specifically, they could easily identify and use some DCs, such as sequencer, appositive, adversative, concessive, alternative, and summation, when they planned an introduction, body, and conclusion in a structured argumentation. As one IG participant stated:

Excerpt 3: “首先，在开头和结尾的话语联系语可以很快的分辨，出现转折的话语联系语的时候,可以很快的发现。以及进行举例其实是为了更好的解释原来出现的词或者句子。” (P260)

[Translation: “First, the sequencer and summation DCs can be quickly identified, as well as adversative DCs. And giving examples is actually to better explain the preceding words or sentences.”]

From the above example, IG participant (P260) understood that some DCs should be employed appropriately for the purpose of different usages depending on the context. Further, one UIG participant added the following:

Excerpt 4: “1. 整合话语联系语并将其分成三大类；2. 明白了各个话语联系语的意思和用法，并且能将它们运用在不同语境里。” (P72)

[Translation: “1. Integrate DCs and divide them into three major categories; 2. Understand the meaning and usage of various DCs, and be able to apply them in different contexts.”]

Third, seven EG participants (23%), six IG participants (19%), and eight UIG participants (24%) believed that their logical capability was promoted. Participants expressed that they could put their ideas in a logical order by employing DCs, and thus improved the smoothness and clarity of their argumentative writing. Fourth, one EG participant (3%), three IG participants (9%), and two UIG participants (6%) pointed out that their reading proficiency was also improved by learning DCs.

Last, in the “other” category, for one thing, two EG participants did not answer this question clearly. For another, one IG participant thought that using learned DCs would help him get more writing scores, and another IG participant did not answer this question at all. To conclude, EG and IG participants gained more confidence in improving writing and UIG participants had a better understanding the usage of DCs.

Table 17. *Percentage of Confidence of Using Learned DCs*

Description of item	EG (<i>n</i> = 30)		IG (<i>n</i> = 32)		UIG (<i>n</i> = 34)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%

Writing	15	50%	16	50%	13	38%
Understanding the usage of DCs	5	17%	5	16%	11	32%
Logical capability	7	23%	6	19%	8	24%
Reading	1	3%	3	9%	2	6%
Other	2	7%	2	6%	0	0%

Note. $N = 96$. EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group; DCs = Discourse Connectives.

To address the second open-ended question (i.e., *How do you think your English argumentative writing has improved by doing this study?*), many participants in each group considered the explicit instruction of DCs as an informative and useful method to improve English argumentative writing. Here are some improvements in writing made by the participants in each group shown in Table 18.

Table 18. *Percentage of Perceived Improvement of English Argumentative Writing*

Description of item	EG ($n = 30$)		IG ($n = 32$)		UIG ($n = 34$)	
	n	%	n	%	n	%
Logical capability	16	53%	16	50%	17	50%
Appropriate use of DCs	8	27%	10	31%	11	32%
Clear writing structure	4	13%	5	16%	6	18%
Other	2	7%	0	0%	0	0%
No improvement	0	0%	1	3%	0	0%

Note. $N = 96$. EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group; DCs = Discourse Connectives.

First of all, more than 50% of the participants across groups reported that they had stronger capability to ensure that ideas were logically and coherently ordered in writing. For

example, one EG participant wrote:

Excerpt 5: “学会使用话语联系语之后，我写议论文会更有逻辑并且更顺畅，论点看来也更加清晰。” (P146)

[Translation: “After learning to use DCs, my argumentative writing is more logical and coherent, and my arguments seem clearer.”]

In addition, eight EG participants (27%), ten IG participants (31%), and 11 UIG participants (32%) thought that they had better understanding of how they should use DCs appropriately, which connect their sentences or paragraphs logically so as to improve English writing performance. One of the EG participants revealed her opinion:

Excerpt 6: “袁老师通过课堂上讲解，与练习结合，我知道了话语联系语的三大类，对他们有了更深入的了解，也知道了他们应该被用在什么地方。” (P56)

[Translation: “Through classroom instruction and practice, Teacher Yuan has helped me understand the three major categories of DCs. I have gained a deeper understanding of them and also learned where they should be used.”]

The above example suggests that some participants in each group have a good understanding of how to use DCs appropriately by explicit instruction while fostering their English argumentative writing performance.

Next, there were four EG participants (13%), five IG participants (16%), and six UIG participants (18%) who believed that they could apply DCs to make writing structure more clear and logical. The following excerpt from one UIG participant illustrated this:

Excerpt 7: “我认为在文体结构，文章内容递进的方面有了进步，层次会分明一

些,不像之前那么长篇大论,没有主次之分。” (P7)

[Translation: “I think I have made some improvements in terms of stylistic structure and the progression of content. The structure of writing is clearer, and there is no longer wordy expressions and lack of priorities that existed before.”]

Last, in the “other” category, there were two EG participants who briefly expressed their English writing was improved. Last, there was only one IG participant who reported that he did not make any improvements on his writing. Overall, the biggest improvement of learning DCs by explicit instruction is logical capability that the participants across groups obtained.

To address the third open-ended question (i.e., *Please take a moment to reflect on how you use discourse connectives in English and Chinese. Can you see any similarities or differences in how discourse connectives are used in both languages?*), when participants across groups reflected on how they used DCs in English and Chinese, they shared their opinions about similarities and differences of using DCs in both languages as shown in Table 19.

Table 19. *Percentage of Similarities and Differences of Using DCs in English and Chinese*

Description of item		EG (<i>n</i> = 30)		IG (<i>n</i> = 32)		UIG (<i>n</i> = 34)	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Similarities	Logical relations	10	33%	9	28%	9	26%
	Different categories	1	3%	2	6%	3	9%
	Location of DCs	2	7%	0	0%	1	3%
	Meaning	2	7%	1	3%	0	0%
	Usages	6	20%	10	31%	11	32%

	Context culture	2	7%	5	16%	7	21%
Differences	Location of DCs	7	23%	4	13%	2	6%
	Capitalization and lowercase	0	0%	1	3%	1	3%

Note. $N = 96$. EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group; DCs = Discourse Connectives.

In Table 19, as to similarities, ten EG participants (33%), nine IG participants (28%), and nine UIG participants (28%) agreed that no matter using DCs in English or Chinese, they had to first consider the logical relations between the sentences and DCs (e.g., adversative, concessive, and corroborative). For instance, one EG participant's opinion is provided in the following excerpt:

Excerpt 8: “汉语和英语的话语联系语都有添加，转折，列举，因果等等形式，且两者都话语联系语一般都会用在两句话开头，加强句与句之间的逻辑关系。” (P146)

[Translation: “DCs in Chinese and English have the forms of additive, adversative, appositive, and causation. Both DCs are generally used at the beginning of two sentences to strengthen the logical relation between sentences.”]

Furthermore, one EG participant (3%), two IG participants (6%), and three UIG participants (9%) reflected that DCs could be divided into different categories based on different usages in both English and Chinese. Next, two EG participants (7%) and one UIG participant (3%) conveyed that some DCs in both languages could be located at the beginning of the sentences. Last, two EG participant (7%) and one IG participant (3%) believed that some DCs contained similar meanings in both languages.

In terms of differences, to begin with, six EG participants (20%), ten IG participants

(31%), and 11 UIG participants (32%) conveyed that there were some different usages of DCs in English and Chinese. For instance, one EG participant also acknowledged that there are less DCs in Chinese than in English, as described that in the following excerpt:

Excerpt 9: “汉语中表因果关系我们会用到因为所以，而在英语中却有很多表示因果的词语，比如表示因为有 because, since, 表示所以 so, therefore, 我们需要考虑其用法去恰当地使用它。” (P62)

[Translation: “In Chinese, we only use ‘*because*’ and ‘*so*’ to indicate cause and effect relation, while in English, cause and effect can be expressed in many ways, such as ‘*because*,’ ‘*since*,’ ‘*so*,’ ‘*therefore*,’ we need to consider their usages and use them properly.”]

Further, several participants across groups have also realized that Chinese languages allows double DCs in complex sentences, which demonstrates different usages from English DCs. For example, in Excerpt 10, one of the IG participants shared the following:

Excerpt 10: “在英语中话语联系语 “Because, ” “Although” 一个词就可以把两句话连接在一起，而在中文中话语联系语要使用两个词，例如：因为.....所以.....， 虽然.....但是.....。” (P11)

[Translation: “In English, DCs such as “*Because*” and “*Although*” can connect two sentences together, while in Chinese, DCs use two words, such as “*yinwei (becacuse)...suoyi (so)...*,” “*suiran (although)...danshi (but)...*”]

In addition, two EG participants (7%), five IG participants (16%), and seven UIG participants (21%) thought that a second major difference of context cultures had an impact on their using DCs in English writing. As one UIG participant stated:

Excerpt 11: “中文相对于英文是高语境文化，话语联系词相比于英文用的比较少。” (P4)

[Translation: “Chinese represents a high context culture compared to English, and there are fewer DCs used compared to English.”]

Third, seven EG participants (23%), four IG participants (13%), and two UIG participants (6%) reported that some differences of using DCs between English and Chinese centers on the location of DCs in complex sentences. Last, there were one IG participant and one UIG participant who reported that when they used English DCs, they had to draw attention to its capitalization and lowercase but not in Chinese.

From the above results, participants at different writing proficiency levels believed that DCs in English and Chinese represent similar logical relations, but the different usages of DCs can be shown in both languages.

Table 20. *Percentage of Perceived Improvement on Using DCs*

Description of item	EG (<i>n</i> = 30)		IG (<i>n</i> = 32)		UIG (<i>n</i> = 34)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Having improvement	30	100%	31	97%	34	100%
No improvement	0	0%	1	3%	0	0%

Note. *N* = 96. DCs = Discourse Connectives; EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group.

To address the fourth open-ended question (i.e., *Has your understanding of discourse connectives improved by receiving explicit instruction?*), in Table 20, except for one IG participant (P12), who conveyed that he did not make any improvements on using DCs because he was already familiar with the target DCs prior to the treatment, all EG and UIG

participants, as well as 97% of the IG participants, believed that they made improvements on using DCs.

They reiterated that receiving explicit instruction of DCs not only helped them accumulate more useful logical expressions, but also helped them use DCs appropriately to improve their logical flow when they structured sentences or writing. The following excerpt from one UIG participant indicated as per Table 20:

Excerpt 12: “是。平时的写作中用到少量的话语联系语，并且有时还会用错。

通过这次话语联系语的学习与练习，对话语联系语有了明确地分类，并且可以使文章更有逻辑。” (P30)

[Translation: “Yes. A small amount of DCs are used in daily writing, and sometimes they are misused. By learning and practicing DCs in this study, I can classify DCs clearly, and can use them to make the article more logical.”]

Another UIG participant has realized the importance of learning and accumulating knowledge of DCs. Without mastering some useful DCs, she might get some difficulties in writing or even in reading comprehension. For example, one UIG participant stated:

Excerpt 13: “有一定的帮助。比如 *nevertheless*, *conversely*, *similarly*, *alternatively*,

这些词我很少使用，见的也不多，也没有刻意学习过，感觉掌握一些常见的少数词就够用了，事实上这不但会影响我的写作，甚至会导致我的阅读理解出现问题。” (P14)

[Translation: “It is somewhat helpful. For example, ‘*nevertheless*,’ ‘*conversely*,’ ‘*similarly*,’ ‘*alternatively*,’ I rarely use these words, haven’t seen many of them, and also haven’t deliberately studied them. I feel that

mastering a few common few ones is enough. In fact, this not only affects my writing, but may even cause problems in my reading comprehension.”]

Last, when participants were asked about how their teachers could better instruct DCs, Table 22 shows percentages of participants’ preferred teaching approaches to learning DCs after the treatment. Some teaching approaches reported by participants in each group are as follows: More than 40% of the participants across groups suggested that teachers could provide more examples about how DCs link sentences or paragraphs together smoothly, and express the relationships between different sentences or parts of a sentence so that there are no breaks between ideas. Furthermore, teachers could provide example texts with and without DCs. For example, the text without DCs might be unclear to readers about how the different ideas are related. If some DCs were added at proper positions, the relationship among the ideas described could be clearer, and the text could read more coherently.

In addition, more than 20% of the participants in each group stressed that it would be helpful for teachers to provide more exercises to improve students’ learning of DCs. For example, teachers first could explain the usage of each type of DCs and guide students to practice DCs in individual sentences, so as to help students understand how to connect sentences logically by different DCs. Further, through writing practice, teachers could clarify how DCs can better play their role in sentences and paragraphs, so that students could use DCs appropriately and make their writing more coherent.

Third, six EG participants (20%), four IG participants (13%), and five UIG participants (15%) suggested that fun interactive activities could be provided in the classroom in order to reinforce students’ understanding of DCs. For instance, participants suggested that

teachers could ask students to contrast two DCs that are very similar. Teachers could teach students a variety of comparative DCs and then play a game where they need to employ words to earn points for identifying similarities and differences. In addition, students suggested that teachers could have students listen to a speech and note down the DCs they heard that the presenter used.

Fourth, two EG participants (7%), two IG participants (6%), and four UIG participants (12%) agreed that it was beneficial for them to learn DCs by explicit instruction in this study. Particularly, participants suggested that teachers could introduce the categories and usages of DCs, then provide some well-structured example articles to demonstrate how DCs contributed to the flow of writing, while reinforce the role of DCs in writing. Next, teachers could assign some exercises where students could identify DCs in a given text and discuss DCs' purposes. Finally, teachers could encourage students to practice writing sentences, paragraphs, or essays by using appropriate DCs, and ensure logical flow.

Fifth, there was one IG participant (3%) who suggested teachers could integrate explicit instruction into implicit instruction. For example, "initial instruction could be explicit but later students could be exposed to the targeted features more implicitly" (El-Dakhs et al., 2022, p. 14). Last, two EG participants (7%) and one IG participant (3%) did not have any ideas about their preferred teaching approaches to acquiring DCs.

Table 21. *Percentage of Preferred Teaching Approaches to Learning DCs After EI*

Description of item	EG (<i>n</i> = 30)		IG (<i>n</i> = 32)		UIG (<i>n</i> = 34)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Providing more examples	13	43%	16	50%	16	47%

Increasing exercises of practicing DCs	7	23%	8	25%	9	26%
Providing interactive activities in class	6	20%	4	13%	5	15%
EI	2	7%	2	6%	4	12%
Integrating EI with II	0	0%	1	3%	0	0%
No comment	2	7%	1	3%	0	0%

Note. $N = 96$. DCs = Discourse Connectives; EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group; EI = Explicit Instruction; II = Implicit Instruction.

The aforementioned results suggested that a majority of the participants across groups prefer their teachers to provide more examples to illustrate DCs and include more exercises to practice DCs. What is more, some of the participants in each group agreed that implementing some fun activities could facilitate learners in improving their using of DCs. Below is an excerpt shared by one UIG participant:

Excerpt 14: “教师可以通过生活实际的例子对学生进行引导，比如多给学生举例子说明什么情况下该使用话语联系语以及如何使用才是正确的；向学生讲解范文和比较具有信服力的作家的作品等形式向学生传授经验；采取课堂互动的形式呈现，让学生组成小组，互相分享各自对于话语联系语的理解，或让学生做类似的课堂游戏，加深学生对于话语联系语的印象和理解。” (P2)

[Translation: “Teachers can guide student through practical examples in life, such as setting more examples to students in order to explain under what circumstances DCs should be used and how to use them correctly; impart experience to students by instructing model essays and works written by famous writers; adopt different forms of interaction in classroom, let students form groups to share their

understanding of DCs, or let students play related games in the classroom to deepen students' impression and understanding of DCs.”]

4.5 Summary

In this chapter, the data gained from the pre- and post-treatment surveys and pre- and post-treatment writing tests were analyzed qualitatively and quantitatively in four sections. In the first section, in order to answer the first research question, the content analysis of the pre-treatment survey was presented along with some excerpts from the participants' responses with regard to participants' perceptions on challenges of using DCs before explicit instruction. Although 80% of the participants across groups reported that they knew those example DCs, including reported known usage and meaning of DCs, no more than 50% of the participants in each group had experience using example DCs based on skill domains (e.g., writing and speaking) and functions (e.g., transition and denoting logical relations). Moreover, although more than 50% of the participants across groups could make appropriate sentences by using 'although' and 'because,' an average of the participants in each group could make appropriate sentences by using 'nevertheless' and 'on the other hand.' In addition, no more than 40% of the EG and IG participants had no experience of being taught to use DCs appropriately in English writing classes. In this study, the aforementioned issues shown from Tables 5 to 7, and Figure 5 were the reported challenges that some Chinese undergraduate students from the first year to the third year had to overcome in order to use DCs appropriately in English argumentative writing before the treatment. Therefore, to resolve these reported challenges, many participants in each group suggested that it was vital for their teachers to instruct the usage of DCs by employing some useful and practical methods such as providing examples

and exercises in English writing classes.

In the second section, the results of descriptive statistics and paired-sample *t*-test were reported in order to answer the second research question that aims to determine whether explicit instruction of DCs has an effect on Chinese EFL learners' use of DCs and writing performance across different writing proficiency levels and to what extent. In the total frequency and appropriateness of using DCs, there were statistically significant differences between pre- and post-treatment writing tests across EG, IG, and UIG. As for the frequency and appropriateness of using three types of DCs, in Type I DCs (e.g., *in addition*, *finally*, and *similarly*) and Type III DCs (e.g., *because* and *to conclude*), there were statistically significant differences between the two tests in EG, IG, and UIG. In Type II DCs (e.g., *nevertheless*, *although*, *or*, *in fact*, and *on the other hand*), there was a statistically significant difference in IG, but there were no statistically significant differences in EG and UIG. Regarding their writing performance, EG and IG participants made significant improvements but not UIG participants after the treatment.

In the third section, the results of Pearson's correlation were shown to answer the third research question that explored the relationships between Chinese EFL learners' appropriate use of DCs in argumentative writing and their writing performance across different writing proficiency levels after explicit instruction. In the pre-treatment writing test, there were significant correlations between the appropriate use of Type I DCs and writing scores in IG, and between the total appropriate use of DCs and writing scores in UIG. In the post-test, correlational analyses showed that there were significant correlations between the appropriate use of Type II DCs and writing scores in IG, and between the total appropriate use of DCs and writing scores by EG and UIG, but not in IG.

Finally, the qualitative analysis of the post-treatment survey was presented together with some excerpts from the participants' responses concerning participants' perceptions on how explicit instruction of DCs helped them address their argumentative writing challenges. The results indicated that the explicit instruction of DCs could help EG, IG, and UIG participants overcome their challenges in the use of DCs in argumentative writing.

Chapter 5: Discussion

In this chapter, the main findings are summarized and discussed according to the results presented in Chapter 4. First, a summary of key findings is shown. Then, it is followed by a discussion of the results addressing four research questions: learners' challenges of employing DCs in writing before the treatment, the effects of explicit instruction of DCs on using DCs and writing performance, the relationships between the appropriate use of DCs and writing performance, and learners' perceptions of acquiring DCs after the treatment. The last section summarizes this chapter.

5.1 Summary of Key Findings

The results demonstrated that Chinese EFL learners across groups (i.e., EG, IG, and UIG) had a better understanding and using of DCs after the explicit instruction of DCs. In the pre-treatment survey, as it was reported, all participants across groups faced some challenges about using DCs in argumentative writing. After the treatment, participants in EG, IG, and UIG were found to have improved on the total frequency and appropriate use of DCs; however, the use of three types of DCs across groups shows some different improvements, respectively (see Tables 10 and 12). On the whole, as reported by the participants across groups through the post-treatment survey, although all the participants reported facing some challenges when they used DCs during the study, they still gained confidence in applying DCs, and their performance of writing argumentation improved in varying degrees. The main findings from this study can be summarized as follows:

1. **Reported challenges of using DCs before the treatment:** Before learning DCs by

explicit instruction, based on my investigation of participants' understanding of the given DCs across groups, the participants reported some challenges when they used DCs in argumentative writing: (a) while more than 80% of the participants from each group reported that they knew the DCs, that is '*although*,' '*because*,' '*nevertheless*,' and '*on the one hand*,' less than 15% of the participants across groups reported that they did not know the DCs (refer to Table 5); (b) according to participants' report about their experience of using given DCs, more than 60% of the participants across groups had experience using given DCs. In addition, there were more than 10% of the EG and IG participants who had no experience using given DCs. However, all UIG participants had experience using given DCs before the treatment (refer to Table 6); (c) when it comes to using given DCs for making appropriate sentences, more than 60% of each group were capable of making appropriate sentences using '*although*.' Similarly, more than 50% of the participants from each group could use '*because*' to make appropriate sentences. Further, no more than 50% of the participants in each group could make appropriate sentences using '*on the one hand*' and '*nevertheless*' (refer to Figure 5); and (d) considering participants' prior experience of being taught to use DCs, about 60% of the UIG participants who had more prior experience than EG and IG participants, had ever been taught about how to appropriately use DCs in English writing classes. Moreover, there were more than 40% of the EG participants who had no experience of being taught to use DCs, which had a higher percentage than IG and UIG participants (refer to Table 7). All in all, before the treatment, EG, IG, and UIG participants believed that they faced some challenges about using DCs in English writing and were willing to learn from their teachers who could instruct the use of DCs by some practical and useful methods for the sake of overcoming those challenges.

2. Frequent and appropriate use of DCs and writing performance: After receiving explicit instruction of DCs, there were statistically differences in the total frequency and appropriateness of using DCs for 96 undergraduate Chinese EFL learners at different writing proficiency levels, and in their employment of two subsets of DCs, that is, Type I (i.e., additive, sequencer, and appositive) and Type III (i.e., causation and summation). In the frequency and appropriateness of using DCs in Type II (i.e., adversative, concessive, alternative, corroborative, and contrastive), there was a significant difference between the pre- and post-treatment writing tests for IG participants, but not for EG and UIG participants (refer to Tables 10 and 12). As for the participants' writing performance, participants in EG and IG made improvements after I compared their writing scores between the pre- and post-treatment writing tests, but not in UIG (refer to Table 14).

3. Relationships between the appropriate use of DCs and writing performance: In the results of the pre-treatment writing test, there was a positive correlation between the total appropriate use of DCs and writing cores in UIG, but there were no correlations between the total appropriate use of DCs and writing scores in EG and IG. In the post-test results, positive correlations were identified between the total appropriate use of DCs and writing scores in EG and UIG. However, there was no correlation between the total appropriate use of DCs and writing scores by IG (refer to Table 15).

4. Reported helpfulness of explicit instruction of DCs: From the results of the post-treatment survey, first, it can be seen that participants across groups still met some challenges when they practiced DCs in this study (refer to Table 16): (a) more than 40% of the participants in each group perceived that it was hard for them to discriminate the logical relations between sentences and DCs, and thus they could not choose DCs appropriately

when they were doing exercises; (b) there were 11 EG, six IG, and five UIG participants who were still unfamiliar with the usage of DCs; (c) due to insufficient knowledge of DCs, several participants in each group were inclined to use some common DCs in English writing; (d) a small proportion of the IG and UIG participants were struggling with putting DCs in the correct location within the sentences; (e) there were one EG participant and two IG participants who reported that it was not easy for them to use DCs in writing.

Second, participants in each group had much confidence in using DCs from the following several aspects (refer to Table 17): (a) about 50% of the EG and IG participants and more than 35% of the UIG participants believed that they had made some improvements on writing argumentation; (b) there were five EG, five IG, and 11 UG participants who conveyed that they had better command of the usage of DCs; (c) there were seven EG, six IG, and eight UIG participants reported that they could express ideas logically by using DCs in their writing; and (d) there were one EG, three IG, and two UIG participants perceived that learning DCs by explicit instruction helped them improve their reading.

Third, considering participants' improvements in English argumentative writing, there were several ideas conveyed by EG, IG, and UIG participants (refer to Table 18): (a) more than 50% of the participants in each group believed that their logical capability had been enhanced by explicit instruction of DCs in writing argumentation; (b) more than 25% of the participants across groups could use DCs appropriately when they wrote argumentation; and (c) more than 10% of the participants in each group could make clear structure of writing.

Fourth, participants reflected on the similarities and differences in how DCs were used in English and Chinese (refer to Table 19). There were mainly four similarities: (a) more than 25% of the participants across groups reported that DCs indicated logical relations

among sentences; (b) several participants in each group thought that DCs could be divided into different categories; (c) there were two EG participants and one UIG participant who perceived that DCs could be located into different positions in the sentences; and (d) there were two EG participants and one IG participant who reported that DCs had similar meanings in both languages. There were also four noticeable differences: (a) more than 20% of the participants across groups thought that there were different usages of DCs in both languages; (b) several participants across groups realized that context cultures in English and Chinese had influence on their using DCs in writing; (c) several participants in each group also found that DCs can be put into different positions in complex sentences; and (e) there were one IG participant and one UIG participant who reported that they should pay attention to spelling DCs in English, particularly in capitalization and lowercase owing to different writing systems in both languages.

Last, the vast majority of the participants across groups reported that they made improvements on using DCs after the treatment (refer to Table 20). Overall, EG, IG, and UIG participants gained confidence in using DCs, which helped them expressed their ideas logically in writing argumentation. They perceived that explicit instruction of DCs was useful and helped them to better understand the usage of the target DCs, which facilitated them to choose appropriate DCs to provide coherence in their argumentative writing. Table 22 presents the findings pertaining to the frequency and appropriateness of using DCs across EG, IG and UIG, and their writing scores between the pre- and post-treatment writing tests.

Table 22. *Summary of Results*

Variable	EG (<i>n</i> = 30)	IG (<i>n</i> = 32)	UIG (<i>n</i> = 34)
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	<i>t</i> -test	Pearson's	<i>t</i> -test	Pearson's	<i>t</i> -test	Pearson's
DCs						
Type I	$p < 0.01$		$p < 0.01$		$p < 0.01$	
Type II	<i>n.s.</i>		$p < 0.01$		<i>n.s.</i>	
Type III	$p < 0.01$		$p < 0.01$		$p < 0.05$	
Frequency (Total)	$p < 0.01$		$p < 0.01$		$p < 0.01$	
DCs						
Type I	$p < 0.01$	<i>neg.</i>	$p < 0.01$	<i>neg.</i>	$p < 0.01$	<i>neg.</i>
Type II	<i>n.s.</i>	<i>neg.</i>	$p < 0.01$	$p < 0.05$	<i>n.s.</i>	<i>neg.</i>
Type III	$p < 0.01$	<i>neg.</i>	$p < 0.01$	<i>neg.</i>	$p < 0.01$	<i>neg.</i>
Appropriateness (Total)	$p < 0.01$	$p < 0.05$	$p < 0.05$	<i>neg.</i>	$p < 0.01$	$p < 0.05$
Writing performance	$p < 0.01$		$p < 0.05$		<i>n.s.</i>	

Note. $N = 96$. EG = Elementary Group; IG = Intermediate Group; UIG = Upper Intermediate Group; DCs = Discourse Connectives; *n.s.* = non-significant; *neg.* = negative correlation.

Based on quantitative and qualitative results, it can be concluded that explicit instruction of DCs may have a positive contribution to the improvement of EG and IG participants' total frequency and appropriateness of using DCs and writing performance. Among UIG participants, although the results obtained from the quantitative data analyses showed the overall statistically use of DCs were improved, their writing performance did not improve. In addition, positive correlations were found between total appropriate use of DCs and the writing test scores in EG and UIG, but not in IG derived from the post-tests results. Further, participants across groups showed positive attitudes towards receiving explicit instruction of DCs according to the results of the post-treatment surveys, and also showed that learners became more aware of using various DCs in writing argumentation. Participants stressed the importance of explicit instruction of DCs in their English argumentation writing. They added that explicit instruction of DCs had not only helped them master more DCs but

had also enabled them to use DCs more appropriately in writing, which made their writing logical and coherent. This finding that explicit instruction of DCs could help EFL learners to use DCs appropriately in writing is line with Liou and Chen (2018).

Overall, the results from the post-treatment surveys show that explicit instruction of DCs facilitated participants' use of DCs and writing performance across different proficiency levels. Owing to the treatment, participants across groups have become aware of a wide range of DCs and have been able to appropriately employ a variety of given DCs in the process of composing their English argumentative writing.

5.2 Discussion of the Results

The following subsections discuss the results according to the specific research questions.

5.2.1 Reported Challenges of Employing DCs in Argumentative Writing: What are the challenges perceived by Chinese EFL learners across different writing proficiency levels when they employ DCs in argumentative writing?

In the pre-treatment survey, when exploring the challenges that participants faced when they employed DCs in argumentative writing, the results showed that most of the participants across groups perceived that they knew the example DCs. However, there were more than 60% of the participants in both EG and IG who were unfamiliar with the usage of the example DCs, such as '*although*,' '*because*,' '*nevertheless*,' and '*on the one hand*.' This finding regarding the lower level of L2 learners about the usage of DCs may stem from their

inadequate language competence (Dastjerdi & Shrizad, 2010). Furthermore, concerning the experience of using given DCs, less than 40% of the participants in each group had experience using given DCs in writing or speaking, and there were less than 20% of the EG and IG participants had experience using given DCs based on different functions (e.g., transition and denoting logical relations). It was noted that more than 10% of the EG and IG participants had no experience using given DCs. Next, although most of the participants across groups could make appropriate sentences using ‘*although*’ and ‘*because*,’ less than 50% of the participants in each group could make appropriate sentences using ‘*on the one hand*’ and ‘*nevertheless*’ In this study, the finding of limited use of DCs by different levels of L2 learners is in line with Cheng and Tsang’s (2022) claim that even at a fairly advanced level, connectors are not easy to master in L2 writing. What is more, there were more than 30% of the participants in EG and IG who had no experience of being taught to use DCs. Many participants across groups suggested that it was necessary for teachers to instruct some skills about how to use DCs appropriately in an English writing class. These results can be connected with Cortes’s (2004) research, which also revealed learners’ limited ability to use DCs in their writing for the possible reason that they were seldom explicitly taught how to appropriately use DCs when doing a writing task.

From the aforementioned challenges, it can be concluded that many EG, IG, and UIG participants did not have much experience using given DCs and those participants across groups did not know how to use them properly in writing. One possible explanation is that there is a lack of sufficient instruction of DCs received by EG, IG, and UIG participants.

5.2.2 Effects of Explicit Instruction of DCs on Using DCs and Writing Performance: Does explicit instruction of DCs improve the use of DCs and writing performance in argumentative writing by Chinese EFL learners across different writing proficiency levels? To what extent?

5.2.2.1 The Frequency of Using DCs. Based on the results presented in section 4.2.1, there were salient differences in the frequency of using DCs by comparing the participants' writing across groups. The explicit instruction provided for EG, IG, and UIG resulted in an overall increase in the frequency of DCs used in the post-test than those used in the pre-treatment writing test. In other words, explicit instruction of DCs could raise participants across groups' awareness of using more DCs in their argumentative writing. Thus, instead of repeating the same DCs, most of the participants in each group used more different types of DCs in the post-test as compared to the pre-treatment writing test. Among three types of DCs, Type I and Type III showed statistically significant differences between the pre- and post-treatment writing tests in EG, IG, and UIG. As for Type II, there were obvious differences in IG even though there were no statistically significant differences in EG and UIG between the pre- and post-treatment writing tests. These findings that participants across groups employed more DCs in Type I and Type III are partially consistent with Chen's (2002) investigation. He claimed that among three types of DCs, many fourth-year Chinese undergraduate students were likely to monotonously use English additive connectives in Type I DCs (e.g., *firstly*, *secondly*, and *thirdly*). Likewise they relied more heavily on using summation connectives in Type III DCs (e.g., *in a word* and *in conclusion*) when composing their argumentative writings. Compared with the frequency of using DCs in Type I and Type III, those Chinese students used less DCs in Type II DCs (e.g., *nevertheless*, *in fact*, and *on the other hand*). To explain further,

in terms of coherence theory, EG participants possess a relatively limited vocabulary and have not developed an advanced level of complex sentence structure. They may not have acquired a sufficient knowledge of Type II DCs, which hinders their ability to use these DCs appropriately. Their primary focus may remain on mastering some basic language features, such as simple words and short sentences, and they have not fully understood the role of Type II DCs in achieving textual coherence. As for UIG participants, they may command better language skills and can use various means to achieve text coherence. However, UIG participants may rely less on Type II DCs and instead use other techniques such as implicit contrast or logical reasoning to convey opposing ideas. For example, one UIG participant wrote that,

firstly online shopping only offers a platform for all the retailers which doesn't mean it can replace the brick-and-mortar stores. For example, there's still a huge demand for luxuries so people who desires to buy things from a luxury store probably prefer the entity store (P159).

Here, there is no explicit Type II DCs (e.g., adversative DCs) such as “*however*” or “*but*.” The advantages of shopping in a physical store are implicitly contrasted with the drawbacks of online shopping. As a result, UIG participants’ writings may become more complex, and the use of Type II DCs may seem relatively less frequent as they may have a wider range of other options for conveying complex semantic relationships. Drawing on relevance theory, EG participants may have limited cognitive resources and are still in the process of basic language acquisition. Understanding and using Type II DCs demand a certain level of cognitive processing, such as discerning the semantic and pragmatic distinctions among various DCs. As for EG participants, appropriately employing Type II DCs may exceed their cognitive capacity; thus, they tend to rely on more basic language expressions that require less cognitive resources.

As far as UIG participants are concerned, they may have a better understanding of the relevance of DCs and may be able to evaluate the relevance of using Type II DCs based on specific contextual factors, such as the intended reader and the purpose of the communication. Instead of using Type II DCs, UIG participants may choose other implicit strategies to express contrast or opposition (e.g., lexical cues) to achieve their communicative goals (Crible et al., 2021).

5.2.2.2 The Appropriateness of Using DCs. In addition to the usage frequency of the target DCs, the explicit instruction also facilitated the participants across groups to improve their argumentative writing with the use of more appropriate DCs. When compared with the pre- and post-treatment writing tests, the results showed an overall increased appropriate use of DCs by the EG, IG, and UIG. In addition, statistically significant differences were found across groups' appropriate use of DCs in Type I and Type III. However, regarding to Type II DCs, there was an obvious difference in the IG participants' appropriate use of DCs, and no statistically significant differences existed in the EG and UIG participants' appropriate use of DCs. As shown in Table 1, the Type II represents contradicting an assumption (including adversative, concessive, alternative, corroborative, and contrastive). These DCs in Type II represent counterarguments or opposing views. Among these connectives, adversative connectives (e.g., *nevertheless*) are the most problematic connectives for some university EFL learners, which is also line in Hamed's (2014) study. Hamed found that 16 four-year Libyan undergraduate EFL learners applied the adversative conjunction (e.g., *on the other hand*) inappropriately in their argumentative writing. Similarly, inappropriate use of adversative DCs was found to be prevalent in the EG participants' essays in the present study. EG participants' English writing proficiency level is probably one of the reasons for the inappropriate use of

adversative DCs. Due to EG participants' relatively low English writing proficiency, they may not have fully grasped these adversative DCs, including their meaning and appropriate usage contexts.

Another issue needed to be noted is that, as a majority of UIG participants had some existing knowledge about target DCs, as shown in Table 5, they may unconsciously employ adversative DCs in their writing, which could be the possible reason why there was no improvement on using DCs of Type II. This may conform to the claim made by Dastjerdi and Shirzad (2010) who stated that compared with Persian EFL learners at the elementary and intermediate levels, Persian EFL learners at the advanced level showed less improvements on their post-test (i.e., writing a 250-word informative essay) after explicit instruction of MDMs. As postulated by the researchers, "advanced learners already know enough language, and are familiar with MDMs; therefore, they unconsciously use such markers in their writing" (p. 169). At a higher level of writing proficiency, UIG participants' attention may shift toward more broader aspects of text coherence. Instead of concentrating on the appropriate application of specific Type II DCs, they may begin to emphasize the overall text structure. For example, they may plan how to introduce an idea, elaborate on it, and then conclude in a more cohesive way. They may also pay more attention to the idea flow, ensuring that one thought smoothly transitions to the next, even if the explicit Type II DCs are not always employed. From the perspective of relevance theory, language users aim to achieve optimal relevance of utterances with minimal cognitive effort. If UIG participants are already familiar with basic adversative DCs such as "*but*" and "*however*," they may consider their current use sufficient and see little need to explore alternatives. Using familiar DCs requires less cognitive effort while still conveying the intended meaning, potentially reducing motivation to expand their DC repertoire.

Finally, there was a noticeable difference between the pre- and post-treatment writing tests among 32 IG participants for the appropriate use of Type II DCs in the present study (see Table 12), which differentiates from Yuan's (2020) research results. In her study, after four-week explicit instruction of DCs, there was no statistically significant difference on the appropriate use of Type II DCs for 15 intermediate Chinese EFL learners between the pre- and post-treatment writing tests. The reason for this might be that there was a smaller sample size in Yuan's (2020) study, and therefore a larger sample size might enable the researcher to strengthen the statistical power and generalize different results.

To summarize, the findings from statistical analysis on the participants' appropriate use of DCs in my study may indicate that explicit instruction could facilitate participants across groups to raise their awareness of using certain types of DCs, and participants may be encouraged to take chances using DCs, although they may sometimes use them inappropriately. In the present study, the findings that participants across groups became aware of using more DCs after receiving explicit instruction were supported by the results of the study conducted by Jones and Haywood (2004). In their study, the 21 EAP undergraduates' and postgraduates' use of FSs had been promoted after being exposed to awareness raising activities. The participants were able to incorporate more discourse markers into their cause-effect and problem-solution type of writings. Therefore, it can be concluded that if the participants' awareness is raised by explicit instruction, their use of DCs may be improved.

5.2.2.3 Effects of Explicit Instruction of DCs on Writing Performance. From the analysis of the differences on writing scores across groups between the pre- and post-treatment writing tests, the results seem to suggest that explicit instruction of DCs in Chinese EFL writing

lessons is advantageous for improving learners' writing performance. This is consistent with the previous study conducted by Dastjerdi and Shirzad (2010). They found out that awareness of applying MDMs could contribute to the overall informative writing quality by Persian EFL learners across different proficiency levels. As noted previously, participants in EG and IG improved in their post-tests but not UIG. This suggests that short-term treatment tends to work better (e.g., improving writing performance) for lower level of L2 learners. Drawing on coherence theory, EG and IG participants may have limited understanding of how to connect ideas in argumentative writing. Since EG and IG participants' language proficiency is still developing, they may find it challenging to express complex relationships between ideas without relying on DCs. The DCs provide them a clear and accessible way to bridge the gap between their developing language abilities and the need to construct a coherent argument. For example, the lower-level L2 learners might find it difficult to illustrate a cause-and-effect relationship without using DCs such as "*because*" and "*so*." By employing these DCs, the lower-level L2 learners may establish a fundamental cause-and-effect relationship in their writing, such as one IG participant wrote "Online stores and real stores have their own advantages and both promote social development, so there is no argument that the development of online stores will make real stores shut down" (P116). From the perspective of relevance theory, such instruction of DCs also aides them in signaling the relevance between ideas. For example, by using connectors like "*in addition*" and "*moreover*," they can highlight pertinent details and more clearly guide the reader's understanding of their writing. Therefore, it can be concluded that the reinforcement of DCs for EG and IG participants through explicit instruction in their writing classes seems to be indispensable, and that explicit instruction is not as helpful for UIG participants because of some variables that may come into play. For example, UIG

participants may have already acquired a relatively extensive vocabulary and a certain level of grammatical competence. They may have developed their own strategies for expressing and connecting ideas in writing, which may be more complicated than relying solely on explicit DCs. For instance, they may use more complex sentence structures and rely on the context to convey relationships between ideas. Therefore, the explicit instruction provided may not have aligned closely with UIG participants' existing knowledge, potentially limiting its effectiveness. Further, UIG participants might approach relevance of DCs with greater nuance, considering factors such as context and rhetorical purpose. As such, instruction of DCs focused narrowly on the use of DCs might have addressed their specific these factors may help explain the lack of significant improvement in their post-treatment writing scores.

5.2.3 Relationships Between the Appropriateness of Using DCs and Writing Performance:

What is the relationship between the appropriate use of DCs and writing performance among Chinese EFL learners across different writing proficiency levels after receiving explicit instruction?

The findings of this study are consistent with the results of the previous studies (e.g., Chen, 2002; Liu & Braine, 2005; Yang & Sun, 2012) in that there was a positive correlation between the employment of DCs and EFL/ESL learners' writing performance. More specifically, there were statistically significant correlations between the total appropriateness of using DCs and the writing performance in EG ($r = .459, p = .001$) and UIG ($r = .365, p = .034$) in the post-treatment writing test, which suggests that EG and UIG participants tend to employ more appropriate DCs in their writings, thus strengthening the coherence of their essays and

obtaining higher scores. However, there was a negative, non-significant correlation between the total appropriateness of using DCs and the writing performance in IG ($r = .240, p = .185$) in the post-treatment writing test, which indicates that the total appropriateness of using DCs in IG may not be correlated with IG participants' writing performance. The lack of correlations between the appropriate use of DCs and writing performance in IG is in contrast to Yuan's (2020) finding that the appropriate use of DCs was significantly correlated with 15 intermediate Chinese EFL learners' argumentative writing scores in the post-treatment writing test after receiving explicit instruction of DCs. One may postulate that while IG participants are beginning to think abstractly about argumentative writing, they still encounter challenges in fully integrating new concepts, such as the appropriate use of DCs into argumentative writing. Although they may understand the basic functions of DCs in a concrete sense, for example, using "*nevertheless*" to indicate contrast, but they may struggle to apply these in more complex and abstract argumentative writing tasks that demand a deeper understanding of the logical relationships between different parts of the text, which may explain the lack of a significant correlation. Statistical significant positive correlations between EG and UIG participants' appropriate use of DCs and their writing scores imply that the appropriate use of DCs can be positively correlated with the better argumentative writing quality of EG and UIG participants but not for the IG participants in this study, which suggests that explicit instruction of DCs supports EG and UIG participants in their appropriate use of DCs to writing performance, in turn, enhances their argumentative writing, and explicit instruction of DCs does not help IG participants in their appropriate use of DCs, which is not associated with better writing performance. However, Huneety et al. (2023, p. 7) claimed that "correlation tests do not always

suggest causation that when two variables in tandem do not necessarily indicate one variable is affecting the other.”

5.2.4 Perceived Helpfulness of Explicit Instruction of DCs: How do Chinese EFL learners across different writing proficiency levels perceive the effectiveness of explicit DC instruction in addressing their argumentative writing challenges?

Based on the qualitative analysis in the post-treatment survey results, there were still some challenges reported by the participants across groups when they used chosen DCs in this study. Many participants in each group perceived that they were still unfamiliar with the logical relations between sentences and DCs. Specifically, they found out it was difficult for them to judge the logical relations of the given DCs in the sentences or text when there was a lack of background of the given sentences or text. It could also be noted that participants across groups had a low level of awareness of sentence or text structures. Further, the participants fail to identify the logic of what they are writing, based on their own experience, appropriate use of DCs can be a challenge for them (Xu et al., 2022). The use of one’s own experience has also been examined by the research of Omar (2018), which distinguishes Kurdish EFL learners from native speakers. It is worthy to note that some UIG participants explained that they were confused with DCs in English logical relations due to their L1 influence. The same factor also applies to Kurdish EFL learners as analyzed by Omar (2018), who found out that L1 influence occurred in coherence and cohesion on Kurdish university-level EFL learners’ argumentative writing. Moreover, in the absence of a deliberate attempt to appropriate DCs, those UIG participants tended to recall DCs from their memory, and the DCs seemed to be an outcome of a

direct transfer from the participants' own languages (Čolović-Marković, 2012; Escalante Gamazo, 2022; Granger, 1998; Paquot, 2008).

Concerning the perceived challenges of using learned DCs, some EG and IG participants reported that they were also still not completely familiar with the usage of the learned DCs. This result suggests that it might be difficult for the lower proficient EFL learners to learn DCs in academic writing (Chaleila & Khalaia, 2020), and the lower proficient participants need more exposure and more practice with the use of the learned DCs as noted by Jones and Haywood (2004). It is also possible that with the time constraints of explicit instruction, the participants in this study need to be involved in a specific type of practice for the treatment and reinforce their understanding the usage of the learned DCs.

Additionally, several participants in each group clarified that owing to their insufficient knowledge of DCs, they often intended to use DCs they are familiar with in English writing. Asassfeh et al. (2013) claimed that the potential reason for overusing DCs was that low proficient EFL writers attempt to avoid their weakness in writing, and perhaps the use of DCs could provide a sense of security to writers (Kuzborska & Soden, 2018). On the contrary, when learners feel such use can be troublesome in their writing, they may avoid certain DCs deliberately.

Subsequently, many participants across groups thought that they gained more confidence in using DCs after the treatment. First, in general, EG, IG, and UIG participants understood that the use of DCs has an positive impact on organizing writing. The participants across groups perceived that using the target DCs would be helpful for them to compose their essays, and make their ideas logical and clear. This result is line with several previous studies (e.g., Ergin, 2013; Huneety et al., 2023; Liou & Chen, 2018). Second, EG, IG, and UIG

participants had a better understanding of the usage of DCs under explicit instruction by doing exercises of multiple types (e.g., analyzing targeted expressions with examples and doing gap-filling exercises). In being consistent with the findings from the earlier cited research (Jones & Haywood, 2004; Linstromberg et al., 2016), doing various exercise types can be reliably effective in directing learners' attention to the target items and help them use the target items appropriately. Notably, when being told about using DCs in the adversative category (e.g., *although, because*, etc.), compared with the participants' report from the pre-treatment survey, a few of participants in each group demonstrated better performances in using those DCs. This may indirectly suggest that explicit instruction have promoted learners' DCs learning process (Liou & Chen, 2018).

Finally, some participants in each group believed that their logical capability improved by using more learned DCs, which logically connected the sentences of their writing together. Some participants across groups wrote very few DCs in their pre-treatment writing tests. However, after the treatment, they used more DCs (e.g., *finally, for example, however, although, or* and *in conclusion*) to help them build a smooth transition between the sentences and paragraphs, thus constructing logical writings. From this perspective, raising language learners' awareness of the vital role of these DCs in composing logical writing seems to promote the learners' use of DCs (AlHassan & Wood, 2015; Hyland, 2008).

When it comes to improvements of argumentative writing, to begin with, more than 50% of the participants in each group conveyed that their logical capability in writing argumentation improved. One possible reason for participants' improvement on logical capability could be attributed their increased knowledge of the target DCs, which represents logical reasoning and argumentation. This finding provides further evidence to an assertion that

“with the teacher’s consistent emphases on logical reasoning in writing processes...they are more capable of choosing appropriate linguistics resources for logical reasoning to achieve valued meaning in academic writing” (Wang et al., 2024, p. 11). Second, some EG, IG, and UIG participants realized that they knew how to employ the target DCs appropriately when they wrote argumentation. This result is consistent with Dastjerdi and Shirzad (2010), which emphasized that the explicit instruction of the appropriate use of MDMs improved writing performance by EFL learners from different proficiency levels. Third, several participants across groups believed that employing more appropriate DCs could make participants’ writing structure clear, which could help participants to convey the relationship between their primary arguments and different levels of subordinate claims in argumentation. For example, in an introduction-body-conclusion argumentative writing structure, one IG participant (P60) reported that she understood using sequencer of DCs in the body (e.g., *first, second, next, third,* etc.) to develop their supporting ideas so as to support their main arguments in the body, which makes her writing more organized.

Concerning the perceptions of similarities and differences of using DCs in English and Chinese, most of participants across groups reported that using English and Chinese DCs shared some commonalities, such as being present in many logical relations, having different semantic categories, locating in different places between sentences and paragraphs, and expressing similar meaning, but differences with regard to how they are used still exist (e.g., usages, context culture, location of DCs, capitalization and lowercase). In term of differences, to begin with, many participants in each group conveyed that there were some different usages of DCs in both languages. Cohesion plays an important role in both English and Chinese (Liu & Wang, 2013; Yang, 2014). Nevertheless, the ways of making coherent discourse are different in these

two languages. English tends to use DCs to keep cohesion, while cohesion in Chinese is constituted mainly through word meanings and repetition (Kong et al., 2023). Lian (2024) further claimed that English is a hypotactic language, which frequently employs various connectives, emphasizing explicit cohesion and structural completeness. In contrast, Chinese is paratactic language, which rarely uses or even does not use connectives, emphasizing implicit coherence and meaning. Therefore, fewer DCs are used in Chinese discourse than English (Kong et al., 2023; Lian, 2024). One EG participant (P62) conveyed that writers tended to use less DCs in Chinese to indicate cause and effect relation between sentences than in English (refer to Excerpt 9).

Further, due to the lower usage frequency of DCs in Chinese and the differences in the use of DCs between English and Chinese, it might be difficult for participants to adapt their use of DCs from one language to another. Chan (2004a) clarified that owing to differences in sentence structure between English and Chinese, complex sentences can be made without DCs in Chinese, but not in English. This is because the main and subordinate clauses have an equal position in Chinese; however, the clauses are not equal in English. This claim is in line with Yang's assertion (2014) that Chinese represents a paratactic structure and cohesion in Chinese can be made implicitly without using DCs. Yang further stated that due to the symmetrical position of Chinese clauses, double DCs are grammatically acceptable in Chinese, but not in English. One IG participant (P11) conveyed a similar idea as Yang (refer to Excerpt 10). For example, in the post-treatment writing test, one EG participant wrote in the following excerpt:

Excerpt 15: “*Although* the Internet is very developed and people usually choose online shopping (**subordinate clause**), *but* the real store also has its own advantages (**subordinate clause**).” (P245)

[Chinese translation: 虽然因特网在发展而且人们通常选择网购, 但是实体店也有自己的优势。]

By contrast, English subordinate clauses are dependent, thus, sentences in Excerpt 15 are not acceptable because ‘*although*’ and ‘*but*’ are subordinate DCs with no main clauses. While this is incorrect in English, it is frequently seen in Chinese EFL learners’ English writings (Kong et al., 2023). Cheng and Tsang (2022) identified that some low-proficiency Chinese ESL learners tended to transfer the “*although ... but*” wrongly into English sentences. The possible reason might be learners’ L1 transfer and result in their problems with DCs (Cheng & Tsang, 2022). It may be true that “previous language knowledge is an important source of influence on L2 acquisition, and this holds universally true of all L2 learners” (Ortega, 2009, p. 31). Ortega (2009) claimed that knowledge of L1 influences L2 development, and language transfer or cross linguistic influences may have positive and negative effects for L2 learning. Thus, for Chinese EFL learners, employing DCs in English sentences or paragraphs appropriately sometimes become difficult not because of the new features in English, but because of the L1 habits already having an existence in their mind.

Additionally, several participants in each group acknowledged that different context cultures between English and Chinese may influence them to use DCs in argumentative writing. As reported by Excerpt 11, due to the low- and high-context cultures in English and Chinese, Chinese EFL learners are inclined to use less DCs in English argumentative writing. There was a contrast between low-context cultures and high-context cultures, which was first proposed by Hall (1976). According to Huang (2010b), “in low-context cultures, only a small amount of shared and implicit information is carried in the context of an event. In contrast, in high-context cultures, individuals rely more on non-verbal communication or shared knowledge and

assumptions in communication” (p. 156). Hall and Hall also (1990) pointed out that English represented low-context culture while Chinese represented high-context culture. Xue and Meng (2007) proposed all sentences organized into an English paragraph by English writers were based on the logical relations that tied them together with various logical conjunctives. By contrast, “sentences in Chinese remain rather isolated without many logical conjunctives created as their cohesive ties” (Xue & Meng, 2007, p. 95). Chinese EFL writers’ tendency to communicate in a high-context culture manner may lead them to overlook using DCs to emphasize uniformity and integrity in English sentence structure, DCs are optional in some contexts in Chinese, which stress the relevance of function and meaning (Lian, 2024). Therefore, the difference in contextual dependence between English and Chinese presents potential difficulties for Chinese EFL learners to use DCs.

Next, a few of participants across groups conveyed that the positioning of DCs in English and Chinese complex sentences also exhibits positional differences when they used DCs in this study. As illustrated by Li’s study (2008), in English main and subordinate complex sentence, the main clause is usually placed before the subordinate clause, and certain types of English DCs such as ‘*but*,’ ‘*or*,’ ‘*however*,’ ‘*nevertheless*’ should be positioned before the subject. For example,

(1) He knows it is dangerous to jump, *but* he wants to try anyway.

(2) You should get up early, *or* you will miss the school bus.

Whereas in Chinese main and subordinate complex sentences, the subordinate clause is usually placed before the main clause. Chinese DCs can be positioned before/after the subject, and some Chinese DCs can be also positioned in the final position as in Excerpt 16. For example, one EG participant wrote in the post-treatment writing test:

Excerpt 16: “If people need something urgently, online shopping can’t meet people’s needs.” (P237)

[Chinese translation: 人们急需什么东西的话，网购不能满足人们的需求。]

Although the subjects in two clauses are different, *renmen* ‘people’ and *wanggou* ‘the online shopping,’ the words *dehua* ‘if,’ which act as DCs in the above Excerpt 16 is placed in the final position of the former clause. Therefore, it can be observed that the DCs in English and Chinese can be placed in different locations of the sentences. This divergence might influence participants to use DCs in their English writing.

Last, a small number of IG and UIG participants mentioned that the different writing systems between English and Chinese had an impact on their employing DCs. According to Cook (2004), many languages have writing systems based on either sounds or meanings. For instance, English (‘alphabetic’) mainly unites letters and speech sounds, and Chinese (‘logographic’) is “a language with a writing system where written symbols connect directly to meaning” (Cook, 2004, p. 3). Chinese writing contains ‘characters,’ each of which expresses a meaning rather than a spoken form. As such, due to no upper- and lower-case letters in Chinese, different writing systems might be a possible explanation for Chinese EFL learners making spelling mistakes of using DCs in English writing. For example, one EG participant wrote in the post-treatment writing test:

Excerpt 17: “I can not say yes or no absolutely, Because [sic.] its devolopment [sic.] has its reasons.” (P222)

The Excerpt 17 shows that this EG participant spelled ‘*because*’ in a wrong way, even she made a mistake in spelling ‘*devolopment*’ in the sentence.

5.3 Summary

Overall, the present study empirically evaluated the efficacy of explicit instruction of DCs on Chinese EFL undergraduate students' argumentative writing performance. By implementing qualitative analysis of the pre-treatment surveys to explore the participants' reported challenges of employing DCs in argumentative writing, it was found that there were more EG and IG participants who did not know the reported known usage of DCs than UIG participants with regard to the perception of knowledge on example DCs before the treatment. Concerning the participants' experiences of using given DCs, although more than 60% of the participants in each group had used given DCs, there were still at least 10% of the EG and UIG participants who did not use given DCs at all. When examined whether the participants across groups could make appropriate sentences by using given DCs, it was shown that participants in each group could make more appropriate sentences by using "*although*" and "*because*" than by using "*on the one hand*" and "*nevertheless*." Thus, it can be concluded that some DCs have been found to be challenging for learners across different writing proficiency levels who have had difficulties using them correctly (Crewe, 1990). As to the participants' prior experience of being taught to use DCs, there were more EG and IG participants who did not have no experience than UIG participants.

Regarding the quantitative analysis of the data in the preceding sections, there was an increase in the total frequency and appropriateness of using DCs among participants across groups. In addition, EG, IG, and UIG participants made improvements on the frequency and appropriateness of using DCs in Type I and Type III. As to the frequency and appropriateness of using DCs in Type II, there was only IG that showed improvements but not in EG and UIG. The findings of this research also reveal the fact that the awareness of using DCs has an impact on

learners' writing performance. EG and IG participants achieved higher writing scores in the post-treatment writing test, and these increases were statistically significant. UIG participants showed the least improvement in writing performance after receiving explicit instruction of DCs, and there was no statistical significance. After the treatment, the correlations between the total appropriateness of using DCs and writing scores in EG and UIG were positive, but there was no correlation between the total appropriateness of using DCs and writing scores in IG.

Meanwhile, the qualitative data collected through the post-treatment survey indicated that although participants across groups still faced some challenges (e.g., unfamiliar with the logical relations between sentences and DCs, unfamiliar with the usage of DCs, insufficient knowledge of DCs, location of DCs, and writing) of using learned DCs, they perceived that they still gained much confidence in using DCs on several aspects, that is, writing, understanding the usage of DCs, logical capability, and reading. In short, participants across groups believed that they made improvements on their appropriate use of DCs and argumentative writing performance because of receiving explicit instruction of DCs.

Chapter 6: Implications, Limitations, Directions for Future Research and Conclusion

This chapter presents the empirical, methodological, and pedagogical implications of this study on explicit instruction of DCs and its impacts on Chinese EFL learners' usage of DCs and their writing performance in argumentative writing, followed by discussions of the study's limitations, directions for future research, and conclusion.

6.1 Implications

6.1.1 Empirical Implications

All participants in EG, IG, and UIG, who received explicit instruction of DCs over four sessions during a four-week period, showed statistically significantly higher total frequency and appropriateness of using DCs as well as the frequency and appropriateness of using DCs in Type I and Type III in the post-treatment writing tests. As to Type II DCs, the data showed that there were statistically significant differences on the frequency and appropriateness of using DCs in IG. However, there were no statistically significant differences on the frequency and appropriateness of using DCs in EG and UIG. Such differences in the results show that explicit instruction of DCs may produce varying degrees of impacts on participants across different writing proficiency levels when the participants learned to use DCs. It is also important to note that EG and IG participants made significant improvement on their post-treatment writing tests; however, there was no statistically significant difference between the pre- and post-treatment writing tests in UIG. This finding seems to suggest that less proficient EFL learners could use more appropriate DCs in their argumentative writings after explicit instruction, and that the explicit instruction of DCs may help them improve their writing ability. When it comes to the

relationships between the writing scores and the total appropriateness of using DCs in the post-treatment writing tests across groups, there were positive correlations among EG and UIG participants, but a negative, non-significant correlation among IG participants. Nevertheless, according to the data from participants' post-treatment surveys, a positive attitude towards the appropriateness of using DCs and writing performance was reported by each group. In addition, participants across groups explained in the post-treatment surveys that the increased awareness of using appropriate DCs helped them improve their writing performance. These findings seem to suggest that explicit instruction of DCs facilitates Chinese undergraduate EFL students in their awareness and use of DCs in argumentative writing, which, in turn, promotes their writing performance.

6.1.2 Methodological Implications

This study used both qualitative and quantitative methods to examine the efficacy of the explicit instruction of DCs on Chinese EFL learners' argumentative writing performance across different writing proficiency levels and their perceptions of acquiring DCs gathered through perception questionnaires. Employing this methodology has provided me the opportunity to gain more comprehensive understanding of Chinese EFL learners' use of DCs across different writing proficiency levels. In this specialized area of research, quantitative data collection method has commonly been used in order to measure learners' use of DCs (e.g., Alavinia & Aftabi, 2013; AlHassan & Woord, 2015; Ergin, 2013; Kapranov, 2018; Moghaddasi et al., 2020; Yaghoubi & Ardestani, 2014). To my knowledge, few studies have gathered language learners' perceptions on the use of DCs in L2 writing through questionnaires. Through these perception

questionnaires, participants had the opportunity to report their learning of DCs before and after explicit instruction, which enabled me to gain insights into their learning and usage of DCs.

6.1.3 Pedagogical Implications

This study offers some pedagogical implications for English language teachers or practitioners to teach English DCs in EFL learners' argumentative writing across different writing proficient levels. First, the findings of the study suggest that explicit instruction enhances Chinese EFL learners' awareness and use of a wide variety of DCs and helps learners improve their use of DCs and their English argumentative writing. The results of this study may provide some insights for English language teaching practitioners, suggesting that features of DCs could be incorporated into instruction on English argumentative writing (Hu & Li, 2015). Concerning the results related to the total frequency and appropriateness of using three types of DCs by participants, it is important to note that although EG, IG, and UIG participants made improvements on Type I and Type III, only IG participants made improvements on using Type II. Therefore, it could be shown that explicit instruction may not have an impact on EG and UIG participants to acquire DCs in Type II. In fact, Type II (e.g., adversative DCs) has been known to cause difficulties for EFL/ESL learners (Hinkel, 2001; Lee & Chen, 2009; Lei, 2012). Some studies have suggested that many French ESL university learners at upper intermediate and advanced levels have trouble in changing the direction of an argument in English argumentative writing (Granger & Tyson, 1996) and adjusting between opposite perspectives (Kuzborska & Soden, 2018). Practitioners may consider emphasizing these Type II DCs when teaching them to EFL/ESL learners in order to develop their performance in argumentative writing.

From analyzing the effectiveness of explicit instruction of DCs, the present study shows that Chinese EFL learners used more DCs from different categories after they participated in four sessions during a four-week period, which indicates that raising learners' awareness through the treatment has had an effect on their use of DCs. The existing research suggests that the use of DCs is important in the writing domain and using DCs appropriately is a vital prerequisite for achieving communicative purposes with the readers (Hyland, 2008; Intaraprawat & Steffensen, 1995; Li & Schmitt, 2009). To this end, it is beneficial for learners to receive instruction aimed at enhancing their use of DCs to better achieve their communicative goals.

As demonstrated in the pre-treatment surveys, some Chinese EFL learners reported challenges in using DCs appropriately; therefore, instructors or practitioners may consider developing curricula for their writing instruction by providing more opportunities to develop learners' writing skills through instructional activities, such as combining sentences and putting scrambled sentences in order (Hamed, 2014). For example, L1 learners could be required to combine sentences using a choice of DCs given in a list. L1 learners could also sequence sets of miscellaneous sentences extracted from a logical text on the basis of the signals of DCs included. It is quite likely that these exercises would help learners to comprehend the semantic functions of DCs in writing. Additionally, when teaching those DCs in English writing in the Chinese EFL context, practitioners could draw attention to an important cultural and linguistic differences between English and Chinese. For one thing, in Chinese culture, communication often depends heavily on context and shared understanding (Hall, 1976; Huang, 2010b). As a result, writers or speakers tend to imply meanings rather than stating them explicitly. This tendency can lead learners to underutilize DCs that clearly signal logical relationships, as they

may expect readers or listeners to infer the connections from the context. In contrast, English-speaking cultures stress explicit communication (Lian, 2024), where DCs are used to clarify the relationships between ideas. What is more, Chinese culture emphasizes harmony and group-orientation. When expressing opinions, learners tend to be more cautious to avoid offending others. This caution may influence the use of DCs in argumentative writing or speaking. Learners might be less likely to use DCs that express strong contrast, such as “*but*” or “*nevertheless*,” in a direct way, perceiving them as too blunt. Instead, they may prefer more nuanced expressions to maintain harmony. In English-speaking cultures, individual orientation is more emphasized, and writers or speakers are more likely to use DCs to express their individual viewpoints clearly and make sharp contrast. Moreover, in Chinese culture, the discourse pattern is characterized by implicitness (Zhang, 2024). Ideas are conveyed in a more roundabout way, and the connections between sentences and paragraphs may not be as explicit as in English. Chinese learners, being accustomed to this implicit mode of expression, might assume that using more DCs in English argumentative writing will clarify logical relationships. This assumption often leads to the overuse of DCs. In reality, overusing DCs can diminish the quality of argumentative writing by making it appear overly complex, thereby detracting from clarity and conciseness.

For another, from the perspective of linguistic differences, English is a hypotaxis-prominent language (English applies cohesive devices and function words on the lexical and syntactic levels such as preposition, connectives, coordinators, and so on), and Chinese is a parataxis-prominent language (Chinese mainly emphasizes the logical relation between sentences by using context but not by using connectives) (Guo, 2007; Lian, 2024; Yu, 2004; Zhang et al., 2022). In this sense, English stresses overt cohesion (subject-predicate structure)

(Li & Thompson, 1976; Hawkins, 1986; Lehmann, 1992), whereas Chinese emphasizes covert semantic coherence (topic-comment structure) (Li & Thompson, 1976). Therefore, it is essential for instructors to remind learners to be aware of the structural differences between the two languages when using DCs in English argumentative writing. For instance, Furthermore, teaching DCs could be integrated into genre-based classes (Akkoç et al., 2018; Ellis et al., 2008). For example, when learners are required to write an exposition, they often need to describe a topic by listing features and examples or explaining how two things are alike and different. Instructors could focus on teaching DCs that fulfill these functions so that students could better understand the context of appropriate use for specific DCs in expository writing. Jones and Haywood (2004) also recommended that EFL instructors could highlight the usages and functions of different DCs categories (e.g., additive, adversative, contrastive, causation, and summation) in reading. This approach recognizes the interactive relationship between reading and writing in the process of learning English as an additional language (Kim, 2020a, 2022), DCs could be taught in complete texts rather than as isolated words. Writing instructors could demonstrate some model texts with appropriately used DCs. When learners are reading the model texts, the instructor could emphasize some DCs that correspond to the texts based on their semantic functions. This kind of focused reading activity could help learners pay close attention to the appropriate use of DCs in English writing. Last, it is important to raise learners' awareness of the overuse of DCs through teaching by providing feedback (Ahmed et al., 2020).

Finally, the conclusions of this study could inform the work of pedagogical material developers. In the development of these teaching materials (refer to Appendices 5, 6, 7 and 8), they need to draw attention to the teaching of appropriate use of DCs in writing. In addition, material developers could cover the relevance of DCs to help learners at different proficiency

levels to use them appropriately.

6.2 Limitations

There are several limitations to consider when interpreting the present study's findings.

Sample Representation and Research Setting: In this study, first of all, the participants were all undergraduate EFL learners with the similar educational background in a private university of China, and most of them speak Mandarin as their first language. Second, this study examined only 96 participants' argumentative writings, and they may not have been a typical representation of the larger population of Chinese EFL learners. Last, the sample was not balanced in gender (85 females and 11 males). For these reasons, there may be a limit to the generalizability of the research findings in Chinese EFL learners from other ethnicities, of different age categories and different genders, because the use of DCs may vary due to any of these variables.

Finally, due to the COVID-19 situation, this study took place in an online classroom where all participants were under direct instruction. This is inconsistent with an authentic setting in which EFL learners would perform English writing and testing. The results might be different if the research had been carried out in a traditional face-to-face classroom.

Data Collection Instruments: The pre- and post-treatment surveys were implemental in identifying participants' perceptions of using DCs for argumentative writing before and after the treatments. Although the participants were allowed to express whether there were any questions that they did not understand in the pre-treatment survey during the pilot study, when coding the

participants' answers in the main study, I realized that my phrasing on a specific question in English still seemed to be confusing to some of the participants, especially in the pre-treatment survey. For example, open-ended questions:

9. What do you know about words and phrases such as: 'although,' 'because,' 'nevertheless,' 'on the one hand'?

10. What's your experience when you use 'although,' 'because,' 'nevertheless,' 'on the one hand'?

Several EG participants answered simply 'yes' in the question nine (e.g., P10) and 'no' in the question ten (e.g., P11). It was discovered that the survey was unable to gain as much of the information as it was designed to obtain. This limitation may stem from the absence of follow-up interviews to further probe participants' survey responses. When analyzing questionnaire data, Mackey and Gass (2011) also attested this problem, and they expounded,

One concern is that responses may be inaccurate or incomplete because of the difficulty involved in describing learner-internal phenomena such as perceptions and attitudes, For example. This may be the case of the questionnaire is completed in the L2, in which lower proficiency in the L2 may constrain the answers. Both learners and native speakers might be able to provide salient details, but they may not be able to paint a complete picture of the research phenomenon. This being so, questionnaires usually do not provide a complete picture of the complexities of individual contexts (p. 96).

Furthermore, while most of the general questions designed in the survey were clear and readable for the participants, I was unable to examine their inappropriate use of DCs in depth during the learning and application process through the treatment. If conditions permit, an additional layer of examination by analyzing inappropriate use of DCs in both pre- and

post-treatment writing tests could be incorporated, which may provide valuable insights into EFL learners' challenges and identify areas for instructional improvement. Huang (2013a) has also noted that it can be difficult to determine whether a survey is able to accurately investigate participants' perceptions in research. This raises questions about the validity of the results obtained through the survey instrument regarding the use of DCs in writing research.

Treatment Durations: One of the main limitations of the present study was insufficient time to conduct the explicit instruction of DCs for a longer period of time. The treatment lasted four weeks, and while the preliminary results are encouraging, it might be challenging for the participants to have a good command of the usage of all the target DCs through explicit instruction in such a short duration (Jones & Haywood, 2004; Cortes, 2006). The duration of DCs instruction for EG, IG, and UIG could be lengthened, and different lengths might produce different results. For example, several IG participants still could not completely understand the usage of DC after the instructional period. One of the IG participants (P248) reported that he was not quite familiar with the usage of some DCs and hoped to do more exercises. If there had been more time allocated to teaching DCs, the learning outcomes could have been much better. However, due to the time constraints, participants' availability, and the restrictions related to COVID-19, it was impossible to conduct the treatment for an extended period.

Despite these limitations, this study still offers important contribution to the relevant literature in this specialized area. Since this empirical research aims at addressing issues that are meaningful to my own teaching context, "the generalizations to other research context should be with prudence" (Yang & Sun, 2012, p. 46).

6.3 Directions for Future Research

In terms of future research directions, there are several essential aspects to be considered by researchers. First, future research may look into the use of DCs in university students' argumentative writing with other EFL learners in different disciplines (e.g., business, engineering, and computer science). With similar research questions, future studies could investigate whether explicit instruction of DCs on participants with different disciplines will result in having different results when composing their argumentative writings. What is more, 11.5% of the participants are male students and 88.5% of the participants are female students (refer to Table 2). Thus, imbalanced gender ratios may affect participants' use of DCs in their writing (Nuswantara et al., 2019). Future research could involve a more balanced sample to investigate whether gender plays a role in the use of DCs. Last, the present study involved 96 Chinese EFL participants divided into three different groups: EG ($n = 30$), IG ($n = 32$), and UIG ($n = 34$). According to O'Leary's (2014) research, "The larger the sample, the more likely it is to be representative, hence, generalizable" (p. 185). An adequate sample size is important in conducting meaningful statistical analysis in order to determine the power of the effects (Huang, 2013b).

Second, Erler and Finkbeiner (2011) pointed out that when conducting future research, researchers should be mindful of different variables that influence results, including individual variables such as learners' background, learning experience, and proficiency levels, and so on. Future research also could consider the practice of different targeting genre types when choosing appropriate DCs for explicit instruction. For instance, summary writing, narrative or expository genre types may each require different kinds of DCs. Some specific types of DCs

with corresponding genre types could help learners gain a deeper understanding of the context for their appropriate use in English writing.

Third, in terms of research methods for understanding learners' insights into their learning process, learners' reflections can be obtained in a more systematic way, such as using diaries/journals, think-aloud protocols, interviews, in order to gain a deeper understanding of the process of learning DCs from the learners' perspective.

Fourth, the length of treatment periods in the future research should be considered. As Huang (2021b) poses the question, the same question applies "What is the optimal length of instruction, factoring in the cost-benefit ratio?" (p. 220). A study that "repeatedly measures observations (collects data) over time" (Shah et al., 2023) could be conducted in order to examine the effects of different treatment durations on how EFL learners acquire DCs for argumentative writing. Additionally, a delayed post-test could be implemented in order to assess the long-term effects of explicit instruction of the target DCs.

Finally, it would be useful to conduct empirical research with one CG and two EGs (EG A: explicit instruction; EG B: implicit instruction) to compare learning gains from using different treatment methods (e.g., explicit instruction vs. implicit instruction), so as to explore the effects of varying instructional approaches to DCs on EFL/ESL students' English argumentative writing. Such research could provide a clear picture of the efficacy of different instructional strategies.

6.4 Conclusion

This study empirically examined the efficacy of explicit instruction of DCs among adult Chinese EFL students' writing performance. Ninety-six EFL learners recruited at a private

university in China volunteered to take part in this study. These participants were divided into three groups: EG ($n = 30$), IG ($n = 32$), and UIG ($n = 34$). Each group received explicit instruction over four sessions during a four-week period. The duration of each session was 90 minutes. Quantitative and qualitative research methods were conducted to address the research questions. Quantitative analysis was implemented to investigate the participants' use of DCs, and their argumentative writing performance in the pre- and post-treatment. For measuring participants' argumentative writing, non-identical standardized writing tests were administered before and after the treatment. Finally, I employed a qualitative method to analyze pre- and post-treatment surveys which provided participants' perceptions of using DCs in argumentative writing before and after the treatment.

As Austin (2016) stated, instructors can conduct research projects for the purpose of helping them find solutions to specific problems arising in the classroom or school. By analyzing the perception surveys qualitatively, the results revealed that one of the challenges Chinese EFL learners across groups faced in argumentative writing was related to the use of various DCs, and explicit instruction seemed to help them become aware of using DCs in order to overcome their lack of using or inappropriate use of DCs in argumentative writing. Furthermore, when it came to the evaluation of total frequency and appropriateness of using DCs across groups, the findings demonstrated that explicit instruction provided during the treatment period resulted in a statistically significant increase in the total frequency and appropriateness of using target DCs in the post-treatment writing test compared to those in the pre-treatment writing test. This suggests that explicit instruction of DCs could help participants to use DCs more appropriately in their argumentative writing. According to the results of their writing performance after the treatment, compared with UIG, EG and IG made better

improvement with their writing. Finally, on completion of the treatment, the results showed that there were positive correlations between the total appropriateness of using DCs and their argumentative writing performance only in EG and UIG. Overall, the findings support the efficacy and teachability of DCs in EFL/ESL writing (Dastjerdi & Shirzad, 2010; Ergin, 2013; Jones & Haywood, 2004; Liou & Chen, 2018; Yuan, 2020).

Deeper insight obtained from the analysis of participants' post-treatment survey revealed that EG, IG, and UIG participants used target DCs more frequently and appropriately, and most improvement in EG, IG, and UIG participants' essays was attributed to using DCs after the explicit instruction. This is in line with several other studies (Alotaibi & Masrai, 2023; Asadi, 2018; Dastjerdi & Shirzad, 2010; Yuan, 2020). A majority of participants expressed that their increased awareness of using target DCs was improved after they had been taught the features and usage of DCs, which might help them to become more proficient writers. Participants also reported that after they were exposed to DCs and explicitly taught how to use them, their ability to employ DCs encouraged them to develop their writing coherently and as well as improve their overall writing performance. Finally, participants reiterated that after the treatment they have more confidence in distinguishing the similarities and differences in how the target DCs were used in English and Chinese so as to help them avoid negative language transfer in L2 writing.

To summarize, how to use DCs appropriately is one of the major challenges in English writing that Chinese EFL learners face. The findings from this study suggest that explicit instruction of DCs helps Chinese EFL learners gain familiarity with the usage of DCs, and thus, enhancing their use of DCs with regard to other textual factors, such as coherence, and hence improving their writing performance especially at the textual level. Therefore, the present study

may contribute to the literature through its examination of the efficacy of explicit instruction of DCs in relation to Chinese undergraduate EFL learners' English argumentative writing performance. Furthermore, to my knowledge, there is little empirical research on the efficacy of explicit instruction of DCs in English argumentative writing among EFL learners across different writing proficiency levels. This study has empirically provided support for the feasibility of the instructional procedures, materials and data collection methods for future research. Finally, this study has provided the recommendation that both English instructors and material developers consider integrating explicit instruction into their courses for teaching DCs to EFL writers, which may help L2 writers employ different DC categories appropriately. This study supports EFL practitioners and pedagogical material developers in providing more detailed information on the instruction of the appropriate use of DCs in English argumentative writing. The aim is to enhance them in developing their pedagogical practices and improve EFL learners' writing skills in Chinese higher education institutions.

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Appendices

Appendix 1 Consent Form



**University
of Victoria**

Department of Linguistics, University of Victoria
P.O. Box 3045 STN CSC, Victoria, BC V8W 3P4
(250) 721-7424 (phone), (250) 721-7423

The Efficacy of Explicit Instruction of Discourse Connectives on Chinese EFL Learners' Argumentative Writing Performance across Different Writing Proficiency Levels

You are invited to participate in a study entitled “The Efficacy of Explicit Instruction of Discourse Connectives on Chinese EFL Learners’ Argumentative Writing Performance across Different Writing Proficiency Levels” that is being conducted by Qin Yuan. I am a lecturer at Department of English, School of Foreign Languages, University of Sanya in China. I am also a Ph.D. candidate in the Department of Linguistics at University of Victoria in Canada and you may contact me (Tel: XXX-XXXX-XXXX or Email: qinyuan@uvic.ca). This research is only for fulfilling the requirements of Ph.D. program for the University of Victoria in Canada.

As a Ph.D. candidate, I am required to conduct research to fulfill my dissertation. This research is being conducted under the supervision of Dr. Li-Shih Huang, whom you may contact (Tel: 001-250-472-4665 or Email: lshuang@uvic.ca).

Purpose and Objectives

This study examines the efficacy of explicit instruction about discourse connectives on Chinese EFL learners’ argumentative writing performance across different levels.

Importance of This Research

This study can provide empirical evidence to inform practitioners about their instructional practice regarding discourse connectives in English argumentative writing.

Participant Recruitment

As a Chinese EFL learner in the first, the second or third year at University of Sanya, you are invited to engage in this research.

What is Involved

If you agree to voluntarily participate in this research, your participation will include:

1. To download and provide your informed consent in the Tencent QQ group: 10 minutes
2. To complete a pre-treatment survey on Wenjuanxing: 15 minutes

3. To perform pre-treatment writing test on Wenjuanxing: 40 minutes
 4. To receive a four-week treatment in the Tencent Meeting: 6 hours
 5. To perform post-treatment writing test on Wenjuanxing: 40 minutes
 6. To complete a post-treatment survey on Wenjuanxing: 10 minutes
- You will be required to engage in this research approximately 8 hours.

Inconvenience or Risks

Participation in this study may cause some inconvenience to you in the sense that you will spend some time participating in this treatment. When completing the pre- and post-treatment writing tests, you may feel a little stressful and fatigued. Apart from these inconveniences, there are no known or anticipated risks.

Benefits

This study may help you to better command discourse connectives and learn to apply them appropriately in English writing, in particular, with the goal of making your English argumentative writing more coherent and logical.

Voluntary Participation

Your participation in this research must be completely voluntary. Your participation or non-participation will have no impact on the grades you receive for the course at University of Sanya. If you do decide to participate, you may withdraw at any time without any consequences or any explanation, and your data will be not used in the analysis and will be destroyed immediately.

As your course instructor, the following measures are taken to mitigate any power-over relationship in order to ensure that your participation is completely voluntary. First, my colleague, who teaches English reading to second-year English-major students, will collect your signed consent forms. Therefore, I will not know who is or is not participating in my research. Both participants and non-participants will receive the same instruction from me. Second, I will not analyze the data until all the grades have been submitted.

Anonymity

In terms of protecting your anonymity, any surveys, writing samples, and feedback you provide will be labeled using a coding number, and not your name. At any time, I am the only person who will have information about the codes of the participants.

Confidentiality and Storing of Data

I will keep the necessary safeguards of your identities. All the data collected online will be kept confidential, and will be used solely for the purpose of this research. Tencent QQ will be used to contact you and provide relevant information about this research. Tencent QQ has its servers in mainland China, and its policy is to maintain the privacy and integrity of users' personal information. It will only disclose user's personal information if permitted by the user for other customer services, or if required to by law enforcement agencies. The Tencent QQ group will be terminated on completion of this research. Wenjuanxing will be used to complete the surveys and argumentative writings. Wenjuanxing is also a service in mainland

China. It will not release personal formation unless requested to by the user for other customer services or if required to by relevant legal or law enforcement agencies). Only I have access to online data from Wenjuanxing. I will cancel the Wenjuanxing account once my data collection is completed. Tencent Meeting will be used to teach you about discourse connectives and English argumentative writing. Tencent Meeting provides free services and covers all over mainland China. It may use personal information to improve its services for customers, which is optional, and would also be required to release personal information in response to a request by law enforcement agencies. I will cancel the Tencent Meeting account once all the instruction is completed. Your identities will be kept private. You will be identified by a number code to ensure your privacy. Any printouts of data collected online associated with this project will be stored in a locked filing cabinet at my place of residence.

Dissemination of Results

It is anticipated the results of this study will be shared with others in the following ways. It may be as part of my candidacy paper, and may also be published in my dissertation, scholarly journals and/or presented at scholarly meetings.

Contacts

Individuals that may be contacted regarding this study include my supervisor, Dr. Li-Shih Huang. Her contact information is listed above. You may also contact me at any time. My contact information is also listed above. In addition, you may verify the ethical approval of this study, or raise any concerns you might have, by contacting the Human Research Ethics Office at the University of Victoria (Tel: 001-250-472-4545 or Email: ethics@uvic.ca).

Name of Participant

Signature

Date



**University
of Victoria**

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显性教学在中国不同英语水平学习者的议论文写作中话语联系语的影响 知情同意书

我叫袁勤，是三亚学院外国语学院英语专业讲师、加拿大维多利亚大学语言学系博士生。现因研究需要，您被邀请参加“显性教学在中国不同英语水平学习者的议论文写作中话语联系语的影响”研究。您可以经由 XXX-XXXX-XXXX（电话）或 qinyuan@uvic.ca（邮箱）与其取得联系。此项研究仅为本人在加拿大维多利亚大学完成博士课程的需要。

本人作为一名博士生，此项研究将有助于其完成博士论文，本研究在 Li-Shih Huang 博士指导下进行，不明之处，您亦可以通过 001-250-472-4665（电话）或 lshuang@uvic.ca（邮箱）与其取得联系。

研究目的

本研究旨在检验通过显性教学在中国不同英语水平学习者的议论文写作中话语联系语的影响。

研究意义

就话语联系语在英语议论文写作应用方面，本研究可为教学人员提供有关的教学方法的实践依据。

参与者招募

作为一名三亚学院大一、大二或大三的英语学习者，您被邀请参加本项研究。

如何参与

如果您同意参加本项研究，您的参与包括：首先，通过腾讯 QQ 群，您将下载并签署一份同意书。第二，通过问卷星，您需要回答一份实验前的调查表。第三，在实验前，通过问卷星，您需要完成一份议论文的写作。第四，通过腾讯会议，您将参与为期四周关于显性教学对英语议论文写作中话语联系语的影响的培训课程。第五，实验结束后，通过问卷星，您将完成一份议论文的写作。最后，通过问卷星，您将填写一份实验后的调查表。您参与本项研究的时间大约共计 8 小时。

不便及风险

参与这项研究可能会给您带来一些不便。在完成前测和后测的写作任务时，您可能会感到有点压力和疲劳。除此以外，没有其他风险。

受益

在英语写作方面，这项研究将有助于您更好地掌握并学会运用话语联系语。特别是，恰当地使用话语联系语旨在使您撰写的议论文条理分明、逻辑性更强。

自愿参加

您参与本实验是完全自愿的。参加或不参加此项研究都不会影响您在三亚学院的学科成绩。如果您决定参与，您可以在实验的任何时间退出，且不需要提供解释和承担后果。同时，一旦退出，您的实验数据将被立即销毁，而不被用于实验分析。

作为您的课程讲师，为了确保您自愿参加本项研究，本人采取了以下措施来缓和权力关系：首先，本人将请教授英语专业大二学生英语阅读的同事，收集您所签署的同意书。因此，本人不知道谁将参与或不参与本人的研究。参与者和非参与者将同时参加本

人的学习指导；第二，直到提交了所有的成绩时，本人才会分析所有的数据。

匿名性

为了保护您的隐私，您所提供的实验数据将以代码的形式记录，而不会以您的名字记录。在任何时间，本人将是唯一掌握参与者代码信息的人。

实验数据保存及保护

本人将采取安全措施以保护您的个人身份。您的网络实验数据将保密，且该实验数据仅为此项研究所用。腾讯 QQ 将用于与您联系和提供与本研究有关的信息，腾讯 QQ 适用于在中国的用户使用，并保护用户的个人隐私和信息的完整。只有事先征求用户的同意或者被法律机关要求，该机构才可以公开披露用户的个人信息给有关部门。一旦完成该实验，本人将撤销该腾讯 QQ 群。问卷星用于完成调查问卷和议论文的写作。问卷星为中国的用户提供服务。只有事先征求用户的同意或者被相关合法或法律机关要求，该机构才可以公开披露用户的个人信息给有关部门。只有本人将查阅您在问卷星里的实验数据。一旦数据收集完毕，本人将撤销问卷星的帐号。您将通过腾讯会议的平台学习话语联系语与英语议论文写作。腾讯会议为中国用户提供免费服务。为了提升该平台的服务，用户可以选择同意是否愿意披露个人信息，或者被法律机关要求，该机构才可以公开披露用户的个人信息给有关部门。一旦授课完毕，本人将撤销腾讯会议的帐号。您的个人信息材料将保密并以代码的形式保存。任何通过网络收集并打印与本项研究有关的资料将锁在本人住所的文件柜中。在本项研究完成五年以后，所有与您有关的网络数据将从本人的电脑中删除，文件将销毁。

研究结果发表

基于您的数据所得到的研究结果将经由如下途径发表：本人的博士候选人论文、博士毕业论文、学术期刊和学术会议上。

联系方式

您可以与本项研究有关的人员联系，包括 Li-Shih Huang 博士，其联系方式已如前所示。您也可以随时与本人取得联系，其联系方式亦已如前所示。此外，您还可以与维多利亚大学人类研究伦理办公室联系(电话: 001-250-472-4545 或 邮箱: ethics@uvic.ca)，以确认本研究的伦理批准情况，或了解其他您所关系的事宜。

以下您的签名表明您已理解上述有关本项研究的介绍，并且有机会就此项研究与研究人员提出问题。最后，您同意参加本项研究。

参与者姓名

签名

日期

Appendix 2 Pre-Treatment Survey

Thank you for your assistance with this questionnaire. It should take you about 15 minutes to complete it. Please read the questions carefully and then respond freely. **You may answer in Chinese if that makes you feel more comfortable.** Your answers are anonymous and will be kept confidential.

a. Individual Profile Questions

Name:	Gender: Male	Female	Other
E-mail Address:	Age:		

1. Where were you born?
2. What language did you learn first?
3. What was the first foreign language you learned?
4. How old were you when you learned it?
5. At what age did you have your first contact with English?
6. For how long have you been learning English?
7. What countries have you stayed or lived in where English is spoken?
8. How long did you stay in each one of them?

Source: Huang (2010a)

b. Open-ended Questions

9. What do you know about words and phrases such as: 'although,' 'because,' 'nevertheless,' 'on the one hand'?
10. What's your experience when you use 'although,' 'because,' 'nevertheless,' 'on the one hand'?

11. Can you make four sentences respectively by using the following words?

1. although:

2. because:

3. nevertheless:

4. on the one hand:

12. Were you taught to use discourse connectives in English writing class? If you were, how were you taught to use discourse connectives?

13. In what ways do you think your teachers can help you learn discourse connectives in English writing class?

Thank you very much for your time.

Appendix 3 Writing Prompt for the Pre-Treatment Test

Pre-treatment writing test:

Code: Date:

You should spend about 40 minutes on this task:

Write about the following topic:

Some people say the main way to be happy in life is to have a lot of money.

How might having a lot of money make people happy?

What other things in life can make people happy?

Give reasons for your answer and include any relevant examples from your own knowledge or experience.

Write at least 250 words.

Source: IELTS General Training (2019)

Appendix 4 A Sample Lesson Plan for Treatment in Week One

Teaching Objectives:

By the end of the lesson, participants will be better able to:

- identify the functions of DCs; and
- use the DCs appropriately in the categories of additive, sequencer, and appositive.

Warm-Up Task (15 min.):

1. Distribute a one-page argumentative essay to every participant.
2. Have participants circle the DCs in the given text.
3. Upon completion, show the answers, using PPT.
4. Have participants compare their answers with the instructor's, and discuss the similarities and differences.
5. Have participants share their reasons why their answers may be different from the actual answers.

Main Task (45 min.):

Sub-task 1(10 min.)

1. Briefly introduce DCs and explain the relationship between DCs and argumentation.
2. Show three pairs of sentences with or without DCs on PPT.
3. Have the participants compare and discuss the different contextual effects between the sentences with and without DCs.

Sub-task 2 (15 min.)

1. Provide a worksheet consisting of approximately ten exercises of two sentences each.
2. Give a list of DCs to participants.
3. Have participants select an appropriate DC to put between each pair of sentences.

Sub-task 3 (20 min.)

1. Distribute a sheet of DCs to each pair.
2. Have each pair work on creating ten sentences using DCs.
3. Have each pair swap its sentences with another pair.
4. Report back the questions they have encountered during the peer-evaluation task.

Post-Task (30 min.):

1. Show a paragraph without DCs.
2. Have participants select appropriate DCs from a given list to complete the sentences within the paragraph.
3. Discuss the various functions by using different DCs.
4. Explicate the appropriate usage of DCs in the categories of additive, sequencer, and appositive.

Appendix 5 Treatment Materials Used in the First Week

Warm-up task

Direction: Please circle the DCs in the following text.

Is It Wise to Make Friends Online?

Is it wise to make friends online? People's views about this issue vary from one to another. Some people think that it is unwise to make friends online while others think that there is nothing wrong with online friends. In my point of view, although online friends cannot be always trusted, the benefits are far more important than the risks. The reasons are mainly as follows:

First, it is easy and quick to get to know people and make new friends online.

We know friends are important in our daily life but they cannot stay with us wherever we go. For many people, especially students in the first year of college, leaving friends and the security of home for a new place where they don't know anyone can be upset. With some online chatting tools such as QQ and MSN, they can talk to people they like and find people with common interests easily. In addition, online friends can help broaden our knowledge about different cultures and customs. Chatting with people from different places and social backgrounds is surely an effective way to understand other cultures and develop cross-cultural communication skills. We can also practice our English in speaking and writing.

To conclude, making friends online is wonderful. In the online global community we can enjoy an active social life with good experience, so it is wise to make online friends.

(Retrieved from the website <http://tem.koolearn.com/20150612/786839.html>) (Some words

were changed)

Main task

Sub-task 1

Direction: Please use appropriate DCs to connect the two sentences.

1. a. Mary is a dedicated mother. She is a talented professor.
 b. Mary is a dedicated mother. **In addition**, she is a talented professor.
2. a. Peter desires to go to college. He has not been accepted into a university.
 b. Peter desires to go to college. **However**, he has not been accepted into a university.
3. a. Sometimes people do not obey traffic laws. They face legal fines.
 b. Sometimes people do not obey traffic laws. **Therefore**, they face legal fines.

Sub-task 2

Direction: Please select an appropriate DC in the box to put between each pair of sentences.

in addition	first	similarly	nevertheless or	in contrast
to conclude	in fact	as a result	although	

1. There are more chances to find jobs in big cities. They can widen their horizons if they come to the big cities.
2. Probably no two people would draw up exactly the same lists to keep fit. I think the following ways would be generally more accepted.
3. Through military training, the college students can be given a sense of military discipline. Furthermore, the military training is beneficial in terms of creating a sense of team spirit.
4. Encouraging home buying is an effective way to promote domestic consumption. It will

benefit the national economy.

5. Begin well, and it will get easier and easier as you go on. If you make a false start, it is far from easy to retrieve your position.

6. Most disputes can be settled in a friendly way. It could develop a long-term relationship.

7. Going abroad can have a chance to be exposed to many modern research facilities. Our home university also provides a good academic atmosphere.

8. Most important of all, the prices are usually reasonable. Fast food restaurants are attracting more and more customers.

9. Allow about eight hours to drive from Calais. You can fly to Brive.

10. There is always something new to learn about. Life is all of surprises to explore.

Key:

- | | | | |
|----------------|-----------------|--------------|----------------|
| 1. in addition | 2. nevertheless | 3. first | 4. to conclude |
| 5. in contrast | 6. in fact | 7. similarly | 8. as a result |
| 9. or | 10. although | | |

Sub-task 3

Direction: Please use these the below DCs to make ten sentences.

moreover, finally, next, first, second, third, for instance, also, furthermore, similarly

Post-task

1. Direction: Please put the given DCs correctly into the following paragraph.

finally second first moreover for instance also

Modern graduates express their gratitude to their school teachers in three different ways. **First**, every holiday season they remember to send them beautiful cards, or gifts of flowers. **Second**, time and again, they invite their teachers out to dinner in fine restaurants, sharing them with their own affairs. **Finally**, whenever their teachers need help, they never fail to provide personal service.

2. Instruct the appropriate usage of DCs in the categories of additive, sequencer, and appositive.

Type I (strengthening assumption):

A. Additive: *also, in addition, furthermore, moreover*

(1) a. The apartment is spacious. The price is reasonable.

b. The apartment is spacious, and also the price is reasonable.

c. The apartment is spacious. In addition, the price is reasonable.

d. The apartment is spacious; furthermore/moreover, the price is reasonable.

The above four expressions express the same conceptual meaning. However, there are differences in determining the relationship between the two conceptual contents. In (1a), the relationship between the two conceptual contents is more vague, and the two concepts refer to two independent characteristics of an apartment (size and price). In (1b, 1c), the use of “*also/in addition*” indicates that there is a parallel relationship between the two concepts, and the latter concept is an addition to the previous concept. In (1d), the use of “*furthermore/moreover*” also indicates that the latter concept introduces an addition to the previous concept and the listener should pay more attention to the latter concept. Thus, it can be seen that DCs vary in the strength of the meanings they convey when guiding the understanding of discourse.

Exercise 1: Please make sentences with the following DCs.

(1) _____, and also _____.

(2) _____. In addition, _____.

(3) _____. Furthermore/Moreover, _____.

B. Sequencer: *first, second, finally, third, next*

(2) Coffee is a good drink to treat your guests with because it's very easy to make. First, warm the pot with hot water, let it stand for a moment before you empty it. Second /Next, put the coffee and the sugar into the pot. Third, fill the pot with boiling water and stir it for a while. Finally, let it stand for 3-5 minutes, and then you can serve your guests.

The words or phrases listed in the underlined parts above are sequencer of DCs commonly used in argumentative essays. Using these words can make the content expressed between sentences or paragraphs clear.

Exercise 2: Please complete the sentences with the following DCs.

First, studying abroad enables us to expand our horizon. Second, _____.

Third, _____. Finally, _____.

C. Appositive: *for example, for instance, similarly*

(3) Some students, for example/for instance, Mary and Tom, live far away from school.

(4) A machine needs fuel. Similarly, man needs food.

The above examples show that the content guided by the appositive DCs strengthens the preexisting assumption.

Exercise 3: Please complete the sentences with DCs.

a. Trucks must stop at red traffic lights. Similarly, _____.

b. We can try many ways to protect our environment, for example, _____.

Appendix 6 Treatment Materials Used in the Second Week

Warm-up task

Direction: Please add the DCs where they are necessary in the following text, and identify their functions.

Should Private Car Owners Be Taxed for Pollution?

With the development of society, many people can afford a car. As the number of the cars is rising, we are facing some problems. One big problem is the pollution caused by the use of cars. In order to solve this problem, government agencies in some big cities recently suggest that a “pollution tax” should be put on private cars in order to control the number of cars and reduce pollution in the city. For my part, I agree to this opinion, and my reasons are as follows: (First), cars contribute to the environmental pollution. (For example), a lot of big cities in China are now influenced by serious air pollution. (Then) it is the responsibility of these private car owners to pay for the pollution and they should be taxed. The purpose of collecting environmental pollution tax is to raise the fund, and (then) use the tax revenue to protect our environment.

(Second), it is a good way to raise people’s environmental awareness by putting a pollution tax on private cars. If people suffer from the financial loss when making a decision, they will think more about their decision. (Therefore), they will consider more when deciding to buy a private car. (As a result), the increasing rate of the number of the private cars can be controlled.

(In a word), it is a very good and necessary attempt to use the means of taxation to treat the pollution. (Thus), it must be kept in mind that all people, including the private car

owners, should try their best to protect the environment.

Retrieved from the website <http://tem.koolearn.com/20150615/786893.html>

(some DCs were changed)

Main Task

Sub-task 1

Direction: Please select the DCs from the below list and use each one to connect the two most appropriate sentences.

- | | | | |
|-------------|----------------|-----------------|----------------|
| a. moreover | b. first | c. nevertheless | d. in contrast |
| e. finally | f. for example | g. but | h. although |

1. Fast food restaurants have several advantages.
2. The house isn't in a suitable position.
3. Their big draw is the time saved.
4. They never keep them.
5. Some people are inclined to make a lot of promises.
6. The price is too high.
7. There is no language or cultural barrier at home.
8. We may not understand others when studying in a foreign country.
9. More importantly, students are given the right to choose teachers.
10. Try to enjoy the happiness exercise can bring.
11. Students are required to tailor their curriculum for themselves.
12. When you are doing yoga, it can bring you confidence as well as enjoyment.
13. My furniture is very old.
14. This is an old saying which says "spare the rod, spoil the child".

15. I don't want to buy a new one.
16. It does not mean that being strict is always the best way.

Key:

1. The price is too high; **moreover**, the house isn't in a suitable position.
2. Fast food restaurants have several advantages. **First**, their big draw is the time saved.
3. Some people are inclined to make a lot of promises, **but** they never keep them.
4. We may not understand others when studying in a foreign country. **In contrast**, there is no language or cultural barrier at home.
5. More importantly, students are given the right to choose the teachers. **Finally**, students are required to tailor the curriculum for themselves.
6. Try to enjoy the happiness exercise can bring. **For example**, when you are doing yoga, it can bring you confidence as well as enjoyment.
7. This is an old saying "spare the rod, spoil the child". **Nevertheless**, it does not mean that being strict is always the best way.
8. **Although** my furniture is very old, I don't want to buy a new one.

Sub-task 2

Direction: Please use as many as possible of the following DCs to write one paragraph of about 50—80 words.

first, second, finally, although, on the other hand, actually, or, conversely, in fact, also, furthermore, moreover, in contrast, however
--

Post-task**1. Direction: Please put the given DCs into the following paragraph.**

in conclusion	however	second	first
---------------	---------	--------	-------

Some people like to go after fashion. They think that fashion is the symbol of the younger generation. **However**, others prefer to go their own way. As to me, I am in favor of the second idea. The following are my personal preference. **First**, it makes people all the same. **Second**, going after fashion needs a lot of money and time. **In conclusion**, passion for fashion may cost you a lot of money and make you miss some other important things.

2. Instruct the appropriate usage of DCs in the categories of adversative, concessive, alternative, corroborative, and contrastive.

Type II (contradicting an assumption):

A. Adversative: *but, however, yet, nevertheless*

“*But*” has a strong tone and is usually placed in the middle of the sentence. The tone of “*however*” is weaker than “*but*” and “*however*” does not directly lead to opposing opinions. Therefore, “*however*” is often used as an insertion. “*Yet*” is commonly used in negative sentences, referring to the situation where no matter how much effort or concession is made, the expected result still cannot be achieved. “*Nevertheless*” means that even if a complete concession is made, it will have any impact.

- e.g.
- a. We love peace, but we are not afraid of war.
 - b. I tried hard to work out the problem, yet I failed.
 - c. We love peace. However, we are not afraid of war.
 - d. There was no news. Nevertheless, he went on hoping.

B. Concessive: *though, although*

though/although: these two words as conjunctions introduce a clause that expresses a concession. The words *though* and *although* are generally interchangeable. *Although* tends to be more formal than *though*.

e.g. Although/Though my car is very old, I don't want to buy a new one.

Although is usually placed at the beginning or in the middle of its clause, whereas *though* may occur elsewhere. In certain constructions, only *though* can introduce inversion.

e.g. Poor though he is, he can afford it.

Child though she was, she did quite well.

C. Alternative: *or, alternatively*

or/alternatively: as another option or possibility

e.g. You can send letters by mail or by hand.

You can drive to Beijing. Alternatively, you can fly to Shanghai.

D. Corroborative: *in fact, actually*

in fact/actually: They are used when expressing a contradictory or unexpected opinion or correcting someone

e.g. It is not true. In fact/Actually, I learned lots of things.

E. Contrastive: *on the other hand, conversely, in contrast*

on the other hand: It uses for giving two different opinions about something

e.g. I would like to eat out. On the other hand, I shall save more money for future plans.

conversely: it indicates that the situation you are about to describe is the opposite of the one you have just mentioned.

e.g. She can not stand sugary food; conversely, her husband is fond of sweets.

in contrast: It shows that you are mentioning a very different situation from the one you have just mentioned.

e.g. It was cold yesterday, in contrast, it's very warm today.

Appendix 7 Treatment Materials Used in the Third Week

Warm-up task

Direction: Please put the following scrambled paragraphs in order.

(Scrambled paragraphs are provided for the learners)

Economic Development: A Solution or Cause of Poverty?

Many people today have clean water, good food, comfortable houses and money to spend. Billions, however, live in terrible conditions, often without enough to eat. Why is it that, despite all our economic progress, so many people is poor? In this article I will discuss if the growth of business and capitalism is keeping people in poverty.

It's easy to blame economic development for many problems. First of all, huge companies use the natural resources of countries. Nigeria's oil, Zimbabwe's diamonds and the Brazilian forest are used up, but no money goes to the ordinary people. Second, much industry leads to pollution or environmental damage. Huge dam projects in India force people from their homes, and pesticide poisoning kills millions. In addition, companies don't care about employees. Some even move during the night to different countries, leaving thousands unemployed.

But it's impossible to turn the clock back and live without economic development. In the first place, any job is better than no job. People need money to buy food, build houses and pay for their children's medicine. Second, business and trade mean that good governments have money to invest in better basic systems and services. They can build better roads, hospitals, and schools, thus attracting more development. Finally, large-scale production provides us with cheap clothes, food, electronic goods and other luxuries. Only free trade and

open markets can give us this consumer lifestyle, for necessities as well as luxuries.

In conclusion, we need to balance the greed of corporations with the needs of our people. Everyone deserves a chance to live a comfortable life.

Retrieved from the website <http://writefix.com/?p=3380>(Some words were changed)

Main task

Sub-task 1

Direction: Please correct the inappropriate DCs in the following text.

Should Parents Use Physical Punishment to Discipline Children?

Many parents use physical punishment to discipline their children. Others prefer to use different methods to reward good behavior or punish bad behavior. This paper will look at some of the arguments for and against physical punishment of children.

It is often claimed that physical punishment will damage children in later life. People who dislike physical punishment claim that the children will grow up to become bad tempered or even beat their wives. Therefore (However), many happily married adults today were hit when they were younger but have never hit their husbands or wives. Another point often made is that physical punishment teaches children that you can use force to make others do what you want. However (In fact), children brought up well soon learn that force by itself is nothing—it must be associated with right. Furthermore (Finally), some people say that punishing a child by hitting him will damage the relationship between the child and the parents. This is clearly wrong. Children who understand the reasons for rules will be happier than children who are not given clear advice.

There are definitely concerns about physical punishment. Some parents lose control and can injure children—even breaking bones or causing an injury. Others can use violence

too much or as the only method of discipline. For one thing (Thus), the child will be hurt, fearful and anxious and will not learn to distinguish right from wrong. The biggest problem with physical violence is when it is not proper to the age of the child. It can be very effective to quickly hit a two-year-old who is screaming. For another (However), it is not effective to beat a 16-year-old who is late for school once again.

Nevertheless (In conclusion), physical punishment can be a useful method of discipline. Moreover (Yet), it should be the last choice for parents. If we want to build a world with less violence we must begin at home, and we must teach our children to be responsible.

Retrieved from the website http://writefix.com/?page_id=1601(Some words were changed)

Sub-task 2

1. Direction: Please complete the sentences by using given DCs.

but, finally, furthermore, alternatively, thus, in fact, on the other hand, in conclusion

1. I'm very tired. _____, I have a cold.
2. After several delays, _____, he set out at 8 o'clock.
3. It is not hot in summer here, _____ it is not cold in winter.
4. This is not a snake, _____, it is a lizard.
5. We could drive all the way. _____, we could fly.
6. It's raining outside. _____, you have to stay at home.
7. More importantly, you can also get more help if living in dorms. _____, living in dorms is the wiser choice for college students.
8. On the one hand, she taught English; _____, she learned Chinese.

Key:

1. furthermore 2. finally 3. but 4. in fact
 5. alternatively 6. thus 7. in conclusion 8. on the other hand

2. Instruct the appropriate usage of DCs in the categories of causation, and summation.

Type III (making contextual implication):

A. Causation: *because, so, then, thus, therefore, as a result*

because: it leads to adverbial clauses of reason.

e.g. The journey was quite quick because the road was clear.

so: it leads to adverbial clauses of result.

e.g. It was still painful so I went to see doctor.

Then is a conjunction, *thus* is an adverb. Therefore, *thus* can be used alone, and followed by a sentence, but it could not combined with the preceding sentence. However, *then* can connect two sentences and form into compound sentences.

e.g. If the answer is “yes,” then we must take an action.

Jimmy is adopted. Thus, he is unrelated to his parents by blood.

therefore infers an inevitable conclusion, which is used to explain the reason why something is happening.

e.g. We do not have enough money, therefore, we cannot buy a new car.

as a result is equivalent to a conjunction and means *so*, which is usually used at the beginning of the sentence.

e.g. As a result, the bad thing has been turned into a good one.

B. Summation: *to conclude, in conclusion, in short, in a word*

e.g. To conclude/In conclusion/In short, there are not the only or best ways to solve the

problem of overpopulation.

※ The phrases represented summation could be placed at the beginning of the paragraph.

He does not work fast enough, he makes too many mistakes, and he never listens to others' advice. In a word, he is not qualified for the position.

※ If using *in a word* makes a conclusion in a paragraph, it is only followed by one sentence.

Therefore, this phrase would better not to be put at the beginning of the paragraph.

Post-task

Directions: Please select a topic from the list below. Writing paragraphs with the given topics using at least three DCs in the given list.

also, furthermore, first, second, finally, for example, similarly, however, though, alternatively, actually, conversely
--

Topics: “pet,” “sport,” “vacation,” “holiday.”

Appendix 8 Treatment Materials Used in the Final Week

Warm-up task

Direction: Please read the following passage and fill in the blanks with the appropriate DCs listed below. Each choice in the bank is identified by a letter.

- | | | |
|------------------|------------|-----------------|
| A) as a result | B) first | C) furthermore |
| D) finally | E) however | F) in addition |
| G) in conclusion | H) in fact | I) nevertheless |

Children: Cooperate or Compete?

Some people view the world as a competitive place, and push their children to win; _____ (1) others value cooperation, and encourage their children to share, play and work together. In this paper, I will ask if winning always means that the other person loses, and whether teaching our children to win is the best preparation for life.

Competition is certainly good. _____ (2), it pushes us to do well, both as children and adults. Our physical limits are tested in competitive sports. Competition in business helps companies to produce new products and services, and competition in politics ensures that different opinions get heard and represented. For children, learning to compete is good preparation for the world. _____ (3), competition does not just mean winning: children have to learn to lose well and to learn from their mistakes.

_____ (4), competition does not just mean success for the individual. When competing as part of a team, children learn the need to share and cooperate.

_____ (5), a focus on competitiveness is not always good for children. To begin with, very young children are naturally self-centered. _____ (6), they have to learn

that there are others around them. Children have to be taught the skills of cooperation and sharing. A further point is that by learning to cooperate and work in teams, children learn to share responsibility when things go badly as well as when they go well. _____ (7), in our high-Interdependent knowledge society, very few important development happens as a result of one person's work or ideas. No matter how brilliant an individual is, his or her work is the result of working in a team or a community. _____ (8), many people now believe that all learning is social, rather than individual.

_____ (9), it is almost impossible to separate these two things of our lives.

We are individuals but we are also social. In his book "The Seven Habits of Highly Effective People," Steven Covey suggests we need to develop a "win-win" attitude. We need to be true to ourselves and what we need, but also to think about the other person's needs. If we can help our children to do this, we will be doing future generations a huge service.

Retrieved from the website <http://writefix.com/?p=143> (some DCs were changed)

Key: 1. E 2. B 3. C 4. F 5. I 6. A 7. D 8. H 9. G

Main task

Sub-task 1

Direction: Please circle the correct answer to each question.

1. Which discourse connective shows sequencer?

a. for example b. third c. then

2. Which discourse connective shows cause?

a. between b. as a result c. actually

3. Which discourse connective shows contrast?

a. furthermore b. though c. conversely

4. Which discourse connective adds more information?

- a. in addition b. finally c. for example

5. Which discourse connective explains?

- a. in contrast b. similarly c. in conclusion

Sub-task 2

Direction: Please write an argumentative essay at least 250 words on the topic given below, and then circle each DC that you find on your essay.

Many people work long hours, leaving very little time for leisure activities. Does this situation have more advantages or more disadvantages?

Give reasons for your answer and include any relevant examples from your own knowledge or experience.

Source: IELTS General Training (2019)

Post-task

Direction: There are three columns, one for each type of DC. Each student has been given a selection of DCs. Please put the given DCs in the column within ten minutes.

also, in addition, but, moreover, first, in fact, second, third, finally, on the other hand, next, conversely, in short, for example, similarly, for instance, furthermore, yet, however, thus, nevertheless, although, to conclude, though, or, therefore, alternatively, actually, in contrast, because, so, then, as a result, in a word, in conclusion.

Type I	Type II	Type III

Appendix 9 Writing Prompt for the Post-Treatment Test**Post-treatment writing test:**

Code: Date:

You should spend about 40 minutes on this task:

Write about the following topic:

The growth of online shopping will one day lead to all shops in towns and cities closing.

Do you agree or disagree?

Give reasons for your answer and include any relevant examples from your own knowledge or experience.

Write at least 250 words.

Source: IELTS General Training (2019)

Appendix 10 Post-Treatment Survey

Thank you for your assistance with this survey. It should take you about 10 minutes to complete it. Please read the questions carefully and then respond freely. **You may answer in Chinese if that makes you feel more comfortable.** Your answers are anonymous and will be kept confidential.

Code:

1. Please share with me your experience about using the discourse connectives learned during this study. (请与我分享一下, 你在本次学习中学习使用话语联系语的经验)
 - a. What aspects of using the discourse connectives do you find challenging? (使用话语联系语的时候, 你认为在哪些方面有挑战?)
 - b. In what aspects of the use of the discourse connectives do you find that you have gained confidence? (使用话语联系语的时候, 你认为在哪些方面获得了信心?)
2. How do you think your English argumentative writing has improved by doing this study? (通过参与本次学习, 你认为你的议论文写作取得了哪些进步?)
3. Please take a moment to reflect on how you use discourse connectives in English and Chinese. Can you see any similarities or differences in how discourse connectives are used in both languages? (请思考一下你是如何使用英语和汉语的话语联系语的。在两种语言中, 话语联系语的使用方式有什么相似或不同之处吗?)
4. Has your understanding of discourse connectives improved by receiving explicit instruction? (你对话语联系语的理解是否通过显性教学得到了改善?)
5. Now that you may have a better understanding of using discourse connectives in English argumentative writing, how do you think discourse connectives can be better taught by

teachers in the classroom? (既然你对在英语议论文写作中使用话语联系语有了更好地理解, 你认为教师在课堂上应该如何更好地教授话语联系语呢?)

Appendix 11 Complete List of Themes

Category Name	Description	Example from Data
Category 1: Learner Background Information	Information volunteered by learner participants regarding their gender, age, first language(s), length of residence in English speaking countries, and length of English language learning.	N/A
Subcategory 1: Gender	Learners' self-reported gender.	N/A
Subcategory 2: Age	Learners' self-reported age at the time of participation.	N/A
Subcategory 3: Birthplace	The country in which learners were born.	N/A
Subcategory 4: First Language(s)	Learners' self-reported first language(s).	N/A
Subcategory 5: Length of residence in English speaking countries	Learners' self-reported length of residence in English speaking countries prior to participation.	N/A
Subcategory 6: Length of English language learning	Learners' self-reported length of English language learning prior to participation.	N/A
Category 2: Learners' Perceptions of Using DCs Before EI	Learners' perceptions of knowledge on DCs, their perceptions of using DCs, making sentences from the given DCs, and their prior learning experience of using DCs.	N/A
Subcategory 1: Learners' perceptions of knowledge on DCs	Passages expressing learners' reported known DCs.	N/A
Code: Reported known DCs	Refers to the perceived known DCs.	N/A
Subcode: Reported known usage of DCs	Refers to the perceived known usage of DCs.	“although 表让步，because 表因果，nevertheless 表转折。” (P67) [Translation: “‘ <i>although</i> ’ indicates concession,

		‘because’ indicates cause and effect, ‘nevertheless’ indicates adversative.”]
Subcode: Reported known meaning of DCs	Refers to the perceived known meaning of DCs.	“虽然，因为，然而，一方面” (P42) [Translation: “‘although’ means suiran, ‘because’ means yinwei, ‘nevertheless’ means raner, ‘on the one hand’ means yifangmian.”]
Code: Reported unknown DCs	Refers to the perceived unknown DCs.	N/A
Code: No comment	Refers to the learners’ perceptions that they had no idea about DCs.	N/A
Subcategory 2: Learners’ perceptions of using given DCs	Passages expressing learners’ perceptions of using given DCs.	N/A
Code: Based on skill domains	Refers to the learners’ perceptions that they used given DCs based on different skill domains.	N/A
Subcode: Writing	Refers to the learners’ perceptions that they used given DCs in writing.	“I use them when I write an English article.” (P163)
Subcode: Speaking	Refers to the learners’ perceptions that they used given DCs in speaking.	“会让我觉得说的时候很顺畅。” (P218) [Translation: “It will make my speaking fluent.”]
Code: Based on functions	Refers to the learners’ perceptions that they used given DCs based on functions.	N/A
Subcode: Transition	Refers to the learners’ perceptions that the given DCs show a transitional function.	“这些词会在描述对比或者转折时用到，有承上启下的作用。” (P66) [Translation: “These words will be used to describe contrast or transition, serving as a connecting link between the preceding and the following.”]

Subcode: Denoting logical relations	Refers to the learners' perceptions that the given DCs indicate logical relations.	“使用这些词，可以使句子更有层次，有逻辑。” (P33) [Translation: “Using these words can make sentences more hierarchical and logical.”]
Code: Other	Refers to the learners' responses that do not directly relate to the questions.	“I can use them very well.” (P12)
Code: No experience	Refers to the learners' inexperience of using given DCs.	“None.” (P209)
Subcategory 3: Making appropriate sentences from the given DCs	Passages expressing learners' making appropriate sentences by using given DCs.	N/A
Code: Although	Refers to the instances that learners made appropriate sentences by using “ <i>although</i> .”	“Although the cake looks small, it's very sweet.” (P37)
Code: Because	Refers to the instances that learners made appropriate sentences by using “ <i>because</i> .”	“I can't finish my homework because I'm sick.” (P46)
Code: On the one hand	Refers to the instances that learners made appropriate sentences by using “ <i>on the one hand</i> .”	“On the one hand I want to go for a picnic, on the other hand the weather is bad.” (P6)
Code: Nevertheless	Refers to the instances that learners made appropriate sentences by using “ <i>nevertheless</i> .”	“She was very tired, nevertheless she kept on working.” (P5)
Subcategory 4: Learners' prior experience of being taught to use DCs	Passages expressing learners' having or not having prior experience of being taught to use DCs.	N/A
Code: Having experience	Refers to the learners' perceptions of having prior experience in learning DCs from teachers.	N/A
Subcode: Learning from teachers' instruction	Refers to the learners' perceptions of having prior experience in learning DCs from teachers' instruction.	“学过，通过老师教授。” (P68) [Translation: “I learned, and was taught by the teacher.”]

Subcode: Learning from constructing sentences	Refers to the learners' perceptions of having prior experience in learning DCs from making sentences by themselves.	“Yes. We use it when we want to connect two related sentences.” (P35)
Subcode: Learning from writing practice	Refers to the learners' perceptions of having prior experience in learning DCs from writing practice by themselves.	“yes. I were. Conjunctions are used when conjunctions are needed to make the article smooth and logical.” (P98)
Code: No experience	Refers to the learners' perceptions of the lack of experience in learning DCs from teachers.	“None.” (P18)
Code: Other	Refers to the learners' perceptions that they did not remember whether they were taught DCs or not.	“I don't remember.” (P1)
Category 3: Learners' Perceptions of Using DCs After EI	Learners' perceptions of having experience in using DCs, their improvement of English argumentative writing, similarities and differences of using DCs in English and Chinese, and their improvement of using DCs.	N/A
Subcategory 1: Learners' experience of using learned DCs	Passages expressing learners' experience in using learned DCs, including challenges and confidence in using learned DCs.	N/A
Code: Challenges	Refers to the obstacles in using learned DCs that learners faced.	N/A
Subcode: Unfamiliar with the logical relations between sentences and DCs	Refers to the lack of knowledge of the logical relations between the sentences and DCs.	“没有很好的理解句子之间的逻辑关系就会使用到错误的话语联系语。” (P24) [Translation: “Without a good understanding of the logical relationships between sentences, incorrect discourse connections may be used.”]
Subcode: Unfamiliar with the usage of DCs	Refers to the lack of knowledge of the usage of DCs.	“部分话语联系语的使用方法不是很清楚或者单词的意思容易弄混淆。”

		” (73) [Translation: “The usage of some discourse connectors is not very clear or the meanings of words are easily confused.”]
Subcode: Insufficient knowledge of DCs	Refers to the lack of knowledge of DCs.	“总是习惯性使用较为简单的话语联系语，很少会去积累多类型的话语联系语。” (P1) [Translation: “I always habitually use relatively simple DCs and rarely accumulate multiple types of DCs.”]
Subcode: Location of DCs	Refers to not knowing where to put DCs in a sentence.	“一是不清楚放在句子里中的哪个位置.....” (P214) [Translation: “First, it is unclear where it is placed in the sentence...”]
Subcode: Writing	Refers to not knowing how to use DCs in writing.	“我认为在写作方面有挑战。” (P11) [Translation: “I think there are challenges in writing.”]
Subcode: Other	Refers to the learners’ responses that do not directly relate to the questions.	“在本次学习使用话语联系语的过程，学到了更深层次的东西。意思相近的词语，在使用方法时也会有所不同.....” (P74) [Translation: “In the process of learning how to use DCs, I have learned something deeper. Words with similar meanings may also have different usages...”]
Code: Confidence	Refers to the learners’ perceived confidence in using learned DCs.	N/A

Subcode: Writing	Refers to the learners' perceived confidence in using DCs to improve their writing.	<p>“写作议论文方面有了很大的信心，更多使用话语联系语，使文章有条理性有结构，写出文章观点一目了然。” (P60)</p> <p>[Translation: “I have gained great confidence in writing argumentation, using more DCs to make writing coherent, well-structured, and with clear and easily identifiable arguments.”]</p>
Subcode: Understanding the usage of DCs	Refers to the learners' perceived confidence in understanding the usage of DCs.	<p>“首先,在开头和结尾的话语联系语可以很快的分辨,出现转折的话语联系语的时候,可以很快的发现。以及进行举例其实是为了更好的解释原来出现的词或者句子。” (P260)</p> <p>[Translation: “First, the sequencer and summation DCs can be quickly distinguished, as well as adversative DCs. And giving examples is actually to better explain the preceding words or sentences.”]</p>
Subcode: Logical capability	Refers to the learners' perceived confidence in using DCs to improve their logical capability.	<p>“句子之间更有逻辑感，更有理。使读者能够很清楚地知道你讲述的是什么事情。” (19)</p> <p>[Translation: “ Sentences are more logical, which enable readers to have a clear understanding of what you are talking about.”]</p>
Subcode: Reading	Refers to the learners' perceived confidence in using DCs to improve their reading.	<p>“我认为在阅读方面获得了信心。” (P11)</p> <p>[Translation: “I think I</p>

		have gained confidence in reading.”]
Subcode: Other	Refers to the learners’ responses that do not directly relate to the questions.	“I have a feeling it might improve my score.” (P164)
Subcategory 2: Improvement of English argumentative writing	Passages expressing learners’ feeling about improvement of English argumentative writing from explicit instruction.	N/A
Code: Logical capability	Refers to learners feeling they improved in logical capability.	“学会使用话语联系语之后，我写议论文会更更有逻辑并且更顺畅，论点看来也更加清晰。” (P146) [Translation: “After learning to use DCs, my argumentative writing is more logical and coherent, and my arguments seem clear.”]
Code: Appropriate use of DCs	Refers to learners feeling they improved in using DCs appropriately.	“袁老师通过课堂上讲解,与练习结合,我知道了话语联系语的三大类,对他们有了更深入的了解,也知道了他们应该被用在什么地方。” (P56) [Translation: “Through classroom instruction and practice, Teacher Yuan has helped me understand the three major categories of DCs. I have gained a deeper understanding of them and also learned where they should be used.”]
Code: Clear writing structure	Refers to learners feeling they improved in making a clear writing structure.	“我认为在文体结构,文章内容递进的方面有了进步,层次会分明一些,不像之前那么长篇大论,没有主次之分。”(P7) [Translation: “I think I have made some improvements in terms of

		stylistic structure and the progression of content. The hierarchy of writing is clearer, and there is no longer wordy expressions and lack of priorities that existed before.”]
Code: Other	Refers to the learners’ responses that briefly answered the question.	“Writing has been improved.” (P245)
Code: No improvement	Refers to learners not feeling they improved in English argumentative writing after the instructional period.	“None.” (P12)
Subcategory 3: Similarities and differences of using DCs in English and Chinese	Passages expressing learners’ reflection on similarities and differences of using DCs in both languages.	N/A
Code: Similarities	Refers to the learners’ perceptions of the similarities of using DCs in English and Chinese.	N/A
Subcode: Logical relations	Refers to the similar logical relations of DCs in both languages perceived by learners.	“汉语和英语的话语联系语都有添加，转折，列举，因果等等形式，且两者都话语联系语一般都会用在两句话开头，加强句与句之间的逻辑关系。” (P146) [Translation: “DCs in Chinese and English have the forms of additive, adversative, appositive, and causation. Both DCs are generally used at the beginning of two sentences to strengthen the logical relation between sentences.”]
Subcode: Different categories	Refers to the DCs that have different categories in both languages perceived by learners.	“英语的和汉语的都具有多种表达不同逻辑关系的话语联系语……” (P214) [Translation: “Both English and Chinese have multiple DCs that express different logical relationships...”]

Subcode: Location of DCs	Refers to the similar locations of DCs in both languages perceived by learners.	“相似之处:一般都放在开头。” (P191) [Translation: “Similarities: it is usually placed at the beginning of the sentence.”]
Subcode: Meaning	Refers to the similar meaning of DCs in both languages perceived by learners.	“在中文中的 ‘所以’, 在英文里 ‘so, thus’ 之类的都是可以互换的” (P119) [Translation: “Chinese word like ‘suoyi’ can be interchanged into English words like ‘so, thus.’”]
Code: Differences	Refers to the learners’ perceptions of the differences of using DCs in English and Chinese.	N/A
Subcode: Usages	Refers to the different usages of DCs in both languages perceived by learners.	“汉语中表因果关系我们会用到因为所以, 而在英语中却有很多表示因果的词语,比如表示因为有 because, since, 表示所以 so, therefore, 我们需要考虑其用法去恰当地使用它。” (P62) [Translation: “In Chinese, we only use ‘because’ and ‘so’ to indicate cause and effect relation, while in English, cause and effect can be expressed in many ways, such as ‘because,’ ‘since,’ ‘so,’ ‘therefore,’ we need to consider their usages and use them properly.”]
Subcode: Context culture	Refers to the different context cultures of DCs in both languages perceived by learners.	“中文相对于英文是高语境文化, 话语联系词相比于英文用的比较少。” (P4) [Translation: “Chinese represents a high context culture compared to

		English, and there are fewer DCs used compared to English.”]
Subcode: Location of DCs	Refers to the different locations of DCs in both languages perceived by learners.	“汉语中连接词大多在句子中,英语中有些连接词放在句首” (P93) [Translation: “In Chinese, most conjunctions are located in sentences, while in English, some conjunctions are placed at the beginning of a sentence.”]
Subcode: Capitalization and lowercase	Refers to the different writing systems in both languages perceived by learners.	“.....英语在使用联系语的过程中需要注意首字母大小写,而汉语则不需要.....” (P19) [Translation: “...English needs to pay attention to the capitalization and lowercase of the first letter when using DCs, while Chinese does not require it...”]
Subcategory 4: Improvement of using DCs	Passages expressing learners’ improvement of using DCs from explicit instruction.	N/A
Code: Having improvement	Refers to learners feeling they improved in using DCs after the instructional period.	“是。平时的写作中用到少量的话语联系语,并且有时还会用错。通过这次话语联系语的学习与练习,对话语联系语有了明确地分类,并且可以使文章更有逻辑。” (P30) [Translation: “Yes. A small amount of DCs are used in daily writing, and sometimes they are misused. By learning and practicing DCs in this study, I can classify DCs clearly, and can use them

		to make the article more logical.”]
Code: No improvement	Refers to learners not feeling they improved in using DCs after the instructional period.	“无。一开始就懂。” (P12) [Translation: “No. I understood from the beginning.”]
Category 4: Learners’ Suggestions for Teaching DCs Before EI	Learners’ suggestions for teaching DCs before explicit instruction.	N/A
Subcategory 1: Providing examples	Refers to the learners’ suggestions for teaching DCs with examples.	“To give us examples and show us the method to use DCs” (P22)
Subcategory 2: Providing exercises	Refers to the learners’ suggestions for teaching DCs by doing exercises.	“It would be nice if we do more writing exercises.” (P52)
Subcategory 3: Using PowerPoint presentation	Refers to the learners’ suggestions for teaching DCs by using PowerPoint.	“PPT 展示, 口头传送” (P35) [Translation: “Power-Point presentation, and verbal instruction.”]
Subcategory 4: Use of L1 and L2	Refers to the learners’ suggestions for teaching DCs by using Chinese and English.	“希望老师可以中英结合讲课, 上课有趣不枯燥。” (P55) [Translation: “I hope the teacher can teach by using Chinese and English, so as to make the class interesting and not boring.”]
Subcategory 5: Other	Refers to the learners’ responses that do not directly relate to the questions.	“I think she will teach me to use more common discourse connectives in English.” (P100)
Subcategory 6: No comment	Refers to the learners’ perceptions that they had no idea about DCs.	N/A
Category 5: Learners’ Suggestions for Teaching DCs After EI	Learners’ suggestions for improving explicit instruction of DCs.	N/A
Subcategory 1: Providing more examples	Refers to the learners’ suggestions for teaching DCs with more examples.	“教师可以通过生活实际的例子对学生进行引导, 比如多给学生举例子说明什么情况下该使

		<p>用话语联系语以及如何使用才是正确的.....”</p> <p>(P2)</p> <p>[Translation: “Teachers can guide student through practical examples in life, such as setting more examples to students in order to explain under what circumstances DCs should be used and how to use them correctly...”]</p>
Subcategory 2: Increasing exercises of practicing DCs	Refers to the learners’ suggestions for teaching DCs by adding more exercises.	<p>“我认为教师在课堂上应该多让学生做有关话语联系语的练习。”</p> <p>(P11)</p> <p>[Translation: “I think teachers should encourage students to do more exercises about DCs in class.”]</p>
Subcategory 3: Providing interactive activities in class	Refers to the learners’ suggestions for teaching DCs by carrying out classroom interactive activities.	<p>“.....采取课堂互动的形式呈现，让学生组成小组，互相分享各自对于话语联系语的理解，或让学生做类似的课堂游戏，加深学生对于话语联系语的印象和理解。”</p> <p>(P2)</p> <p>[Translation: “... Adopts different forms of interaction in classroom, let students form groups to share their understanding of DCs, or let students play related games in the classroom to deepen students’ impression and understanding of DCs.”]</p>
Subcategory 4: EI	Refers to the learners’ satisfaction for EI method.	<p>“可以先把它们分类,然后讲每一类的时候先做一个概阔;再做例题,更好的在语句中应用;最后再分别做总结。差不多就是这四节课的这个课</p>

		<p>堂模式就挺好的。” (P55)</p> <p>[Translation: “You can categorize them first, and then when discussing each category, make a summary first; Do more exercises to better apply them in sentences; Finally, make a summary separately. The classroom mode for these four classes is quite good.”]</p>
Subcategory 5: Integrating EI with II	Refers to the learners’ suggestions for teaching DCs by combing EI with II methods.	<p>“可以用显性教学和隐性教学相结合。显性教学可以使学习更牢固知识点，而隐性教学需要学生多总结和归纳。” (P66)</p> <p>[Translation: “A combination of explicit and implicit teaching can be used. Explicit teaching can make learning more solid, while implicit teaching requires students to summarize and generalize more.”]</p>
Subcategory 6: No comment	Refers to the learners’ perceptions that they had no idea about DCs.	N/A

Appendix 12 Grading Criteria in the Pre- and Post-Treatment Writing Tests

IELTS™

IELTS Writing band descriptors (Public version)
 雅思考试写作评分标准 (公众版)

Task 2

Band	Task Response	Coherence and Cohesion	Lexical Resource	Grammatical Range and Accuracy
9	<ul style="list-style-type: none"> fully addresses all parts of the task presents a fully developed position in answer to the question with relevant, fully extended and well supported ideas 	<ul style="list-style-type: none"> uses cohesion in such a way that it attracts no attention skilfully manages paragraphing 	<ul style="list-style-type: none"> uses a wide range of vocabulary with very natural and sophisticated control of lexical features; rare minor errors occur only as 'slips' 	<ul style="list-style-type: none"> uses a wide range of structures with full flexibility and accuracy; rare minor errors occur only as 'slips'
8	<ul style="list-style-type: none"> sufficiently addresses all parts of the task presents a well-developed response to the question with relevant, extended and supported ideas 	<ul style="list-style-type: none"> sequences information and ideas logically manages all aspects of cohesion well uses paragraphing sufficiently and appropriately 	<ul style="list-style-type: none"> uses a wide range of vocabulary fluently and flexibly to convey precise meanings skilfully uses uncommon lexical items but there may be occasional inaccuracies in word choice and collocation produces rare errors in spelling and/or word formation 	<ul style="list-style-type: none"> uses a wide range of structures the majority of sentences are error-free makes only very occasional errors or inappropriacies
7	<ul style="list-style-type: none"> addresses all parts of the task presents a clear position throughout the response presents, extends and supports main ideas, but there may be a tendency to overgeneralise and/or supporting ideas may lack focus 	<ul style="list-style-type: none"> logically organises information and ideas; there is clear progression throughout uses a range of cohesive devices appropriately although there may be some under-/over-use presents a clear central topic within each paragraph 	<ul style="list-style-type: none"> uses a sufficient range of vocabulary to allow some flexibility and precision uses less common lexical items with some awareness of style and collocation may produce occasional errors in word choice, spelling and/or word formation 	<ul style="list-style-type: none"> uses a variety of complex structures produces frequent error-free sentences has good control of grammar and punctuation but may make a few errors
6	<ul style="list-style-type: none"> addresses all parts of the task although some parts may be more fully covered than others presents a relevant position although the conclusions may become unclear or repetitive presents relevant main ideas but some may be inadequately developed/unclear 	<ul style="list-style-type: none"> arranges information and ideas coherently and there is a clear overall progression uses cohesive devices effectively, but cohesion within and/or between sentences may be faulty or mechanical may not always use referencing clearly or appropriately; uses paragraphing, but not always logically 	<ul style="list-style-type: none"> uses an adequate range of vocabulary for the task attempts to use less common vocabulary but with some inaccuracy makes some errors in spelling and/or word formation, but they do not impede communication 	<ul style="list-style-type: none"> uses a mix of simple and complex sentence forms makes some errors in grammar and punctuation but they rarely reduce communication
5	<ul style="list-style-type: none"> addresses the task only partially; the format may be inappropriate in places expresses a position but the development is not always clear and there may be no conclusions drawn presents some main ideas but these are limited and not sufficiently developed; there may be irrelevant detail 	<ul style="list-style-type: none"> presents information with some organisation but there may be a lack of overall progression makes inadequate, inaccurate or over-use of cohesive devices may be repetitive because of lack of referencing and substitution may not write in paragraphs, or paragraphing may be inadequate 	<ul style="list-style-type: none"> uses a limited range of vocabulary, but this is minimally adequate for the task may make noticeable errors in spelling and/or word formation that may cause some difficulty for the reader 	<ul style="list-style-type: none"> uses only a limited range of structures attempts complex sentences but these tend to be less accurate than simple sentences may make frequent grammatical errors and punctuation may be faulty; errors can cause some difficulty for the reader
4	<ul style="list-style-type: none"> responds to the task only in a minimal way or the answer is tangential; the format may be inappropriate presents a position but this is unclear presents some main ideas but these are difficult to identify and may be repetitive, irrelevant or not well supported 	<ul style="list-style-type: none"> presents information and ideas but these are not arranged coherently and there is no clear progression in the response uses some basic cohesive devices but these may be inaccurate or repetitive may not write in paragraphs or their use may be confusing 	<ul style="list-style-type: none"> uses only basic vocabulary which may be used repetitively or which may be inappropriate for the task has limited control of word formation and/or spelling; errors may cause strain for the reader 	<ul style="list-style-type: none"> uses only a very limited range of structures with only rare use of subordinate clauses some structures are accurate but errors predominate, and punctuation is often faulty
3	<ul style="list-style-type: none"> does not adequately address any part of the task does not express a clear position presents few ideas, which are largely undeveloped or irrelevant 	<ul style="list-style-type: none"> does not organise ideas logically may use a very limited range of cohesive devices, and those used may not indicate a logical relationship between ideas 	<ul style="list-style-type: none"> uses only a very limited range of words and expressions with very limited control of word formation and/or spelling errors may severely distort the message 	<ul style="list-style-type: none"> attempts sentence forms but errors in grammar and punctuation predominate and distort the meaning
2	<ul style="list-style-type: none"> barely responds to the task does not express a position may attempt to present one or two ideas but there is no development 	<ul style="list-style-type: none"> has very little control of organisational features 	<ul style="list-style-type: none"> uses an extremely limited range of vocabulary; essentially no control of word formation and/or spelling 	<ul style="list-style-type: none"> cannot use sentence forms except in memorised phrases
1	<ul style="list-style-type: none"> answer is completely unrelated to the task 	<ul style="list-style-type: none"> fails to communicate any message 	<ul style="list-style-type: none"> can only use a few isolated words 	<ul style="list-style-type: none"> cannot use sentence forms at all
0	<ul style="list-style-type: none"> does not attend does not attempt the task in any way writes a totally memorised response 			