



## References and Conjunctions as Cohesive Devices in Chinese Undergraduate EFL Students' Argumentative Essays

Meihua Liu

*Tsinghua University, China*

The present study explored the use of references and conjunctions in 116 argumentative essays written by Chinese university EFL students. Mainly guided by Halliday and Hasan's (1976) model on cohesion, the study revealed the following major findings: (1) the participants used references more than conjunctions and tended to use demonstrative references and clause connectives and additive conjunctions most frequently in their argumentative essays, (2) high-quality essays had significantly more frequent use of comparative references than low-quality essays, (3) comparative references were a positive predictor for the whole sample's writing scores and reflexive references a negative predictor for low-quality essay scores, and (4) the participants generally had an appropriate use of different kinds of references and conjunctions, with a small percent of problematic use of different types of references and conjunctions in their writing. It is thus concluded that the use of references and conjunctions greatly affects the quality of argumentative writing produced by ESL/EFL students.

**Keywords:** cohesion, cohesive device, reference, conjunction, argumentative writing

### Introduction

As widely acknowledged, writing has become a valuable means of communication in today's world of education (Defazio et al., 2010) and English the dominant language in the academic domain throughout the world (Chou & Shin, 2014; Hyland, 2006). It is thus increasingly important for students in higher education to be able to write in English effectively. Yet, it is quite challenging to do so because it requires not only linguistic knowledge but also high-order cognitive and thinking abilities as well as other abilities. It is especially so for ESL/EFL (English as a second or foreign language) students. One important ability ESL/EFL students have to learn to write effectively is cohesion, a crucial property making a text a text (Halliday & Hasan, 1976).

According to Halliday and Hasan (1976), cohesion refers to the "non-structural text-forming relations" (p. 7). It is the use of explicit cohesive devices that signal relations among sentences and parts of a text (Rahman, 2013). It is essential because it gives texture to sentences to show how semantic relations are composed of lexical and syntactic features (Kang et al., 2010; Warna et al., 2019). Hence, cohesion is of great significance in producing good English writing (Halliday & Hasan, 1976; Liu & Braine, 2005) and has been much researched (e.g., Alzankawi, 2017; Chanyoo, 2018; Dastjerdi & Samian, 2011; Hamed, 2014; Ismail & Linda, 2018; Liu & Braine, 2005; Saputra & Hakim, 2020).

In spite of numerous studies on cohesion, the current literature reveals mixed findings about the use of different types of cohesive devices (e.g., Dastjerdi & Samian, 2011; Warna et al., 2019). For example, Warna et al.'s (2019) analyses of 80 argumentative essays revealed that Indonesian university students



employed references most frequently, followed by conjunctions, lexical cohesive, ellipses and substitution, respectively. This finding was different from that in Dastjerdi and Samian (2011) which showed that the 40 Iranian graduate students used lexical devices the most frequently, followed by reference and conjunction devices respectively. Differences like this might be largely due to the varying sample sizes in different studies and characteristics related to students in different contexts such as cultural and linguistic backgrounds. Moreover, though much research shows that use of cohesive devices is closely related to the quality of writing (e.g., Chanyoo, 2018; Crossley et al., 2016), little research links the use of cohesive devices to ESL/EFL writers at different proficiency levels or essays of varying quality (Chou & Shin, 2014; Park, 2013; Wang, 2015). All these justify more and continuous research on cohesive devices in ESL/EFL writing. This paper thus seeks to investigate the use of reference and conjunction cohesion in argumentative essays composed by Chinese undergraduate EFL students in relation to essays of varying quality.

## Literature Review

Texts, as a means of communication, play an important role in getting the meaning across others and achieving certain purposes (Hameed, 2008). As discussed in Halliday and Hasan (1976), a text is “any passage, spoken or written, of whatever length, that does form a unified whole” and is considered a “semantic unit” (p. 1). Halliday and Hasan (1976) believe that cohesion is the only factor that makes a text a text and an important feature of good writing. Cohesion refers to the set of linguistic means to create texture, namely, the property of a text of being an interpretable whole or a semantic unit (Halliday & Hasan, 1976). Cohesion occurs “where the interpretation of some element in the text is dependent on that of another” (Halliday & Hasan, 1976, p. 4). To them, cohesion “is a semantic relation based on the central notion of presupposition—one element presupposes another which is located somewhere in the text or in the context of situation and which is essential for text interpretation” (Hameed, 2008, p. 83). Halliday and Hasan (1976) identify five types of cohesion: Reference, substitution, ellipsis, conjunction, and lexical cohesion. These grammatical and lexical devices create texture—the property of being a text and form cohesive relations between sentences and elements in sentences, thus contributing to the coherence of the text (Halliday & Hasan, 1976). Tanskanen (2006) and Ajideh (2007) also claim that discourse unity can only be achieved by the use of cohesive devices that contribute to text cohesion.

Reference refers to specific information which links one word to another or one thing to another that occurs somewhere earlier in the text, which includes personal (e.g., ‘I’ and ‘them’), demonstrative (e.g., ‘this’ and ‘that’) and comparative (e.g., ‘same’ and ‘more’) references (Halliday & Hasan, 1976). Later, reference cohesion is expanded to cover reflexive (e.g., ‘itself’ and ‘ourselves’), intensive (e.g., ‘itself’ and ‘themselves’), and indefinite (e.g., ‘each’ and ‘every’) devices (Al-Jarf, 2001; Chanyoo, 2018; Hameed, 2008; Ismail & Linda, 2018). Both ellipsis and substitution presuppose the existence of certain textual elements (Halliday & Hasan, 1976). Substitution involves the replacement of a word, a phrase, or a whole clause by another in order to avoid repetition (e.g., ‘so’ and ‘not’) (Ismail & Linda, 2018). Ellipsis replaces the word, phrase or whole clause by nothing or omits language units to eliminate repetition (Ismail & Linda, 2018) or is “substitution by zero” (Halliday & Hasan, 1976, p. 142). Classified into additive (to add), adversative (to twist), casual (explaining the causal relationship), and temporal (revealing the time or sequential connection), conjunctions are intended to create explicit connections between parts of a discourse to produce coherent writing (Halliday & Hasan, 1976). Continuative (expressing continuity) was added as a type of conjunctions in Gerrot and Wignell (1994). Lexical cohesion is the cohesion achieved by the selection of vocabulary and is classified into two major categories: Reiteration and collocation (Halliday & Hasan, 1976).

Halliday and Hasan’s (1976) model has been widely adopted or adapted in research on cohesive devices used in ESL/EFL writing in various contexts (e.g., Adiantika, 2015; Alzankawi, 2017; Chanyoo, 2018; Crossley et al., 2016; Darweesh & Kadhim, 2016; Dastjerdi & Samian, 2011; Don & Srinivass,

2017; Hamed, 2014; Ismail & Linda, 2018; Lai, 2008; Lee, 2020; Liu & Braine, 2005; Mohamed, 2016; Park, 2013; Saputra & Hakim, 2020; Wang, 2015; Warna et al., 2019; Yang & Sun, 2012; Yeom, 2016; Zhang, 2010). While focusing on different aspects of cohesion, these studies reveal the following major findings: a) students with diverse backgrounds use different types of cohesive devices with different frequencies (e.g., Alzankawi, 2017; Hamed, 2014; Ismail & Linda, 2018; Mohamed, 2016; Rahman, 2013; Saputra & Hakim, 2020; Wang, 2015; Warna et al., 2019; Yeom, 2016), b) the frequency of cohesive devices is (significantly) related to the overall writing quality (e.g., Chanyoo, 2018; Crossley et al., 2016; Dastjerdi & Samian, 2011; Liu & Braine, 2005; Zhang, 2010), and c) students at higher proficiency levels have a better use of cohesive devices in their writing (e.g., Park, 2013; Wang, 2015). For example, Warna et al. (2019) analyzed 80 five-paragraph argumentative essays written by 80 fifth-semester students of English language education from eight Indonesian universities, who completed the essays in 60 minutes. All the participants had completed all writing classes from Writing 1 to 4 and learned how to write argumentative essays. Guided by Halliday and Hasan' (1976) framework, the researchers found that the students employed references (50.24%) most frequently, followed by conjunctions (37.34%), lexical cohesive (7.7%), ellipses (3.57%) and substitution (1.15%), respectively. These findings were different from those in earlier studies (Dastjerdi & Samian, 2011; Liu & Braine, 2005; Zhang, 2010). Liu and Braine's (2005) study of 50 argumentative compositions created by Chinese undergraduate EFL students showed that the participants used lexical devices the most frequently, followed by references and conjunctions respectively. Similarly, Dastjerdi and Samian's (2011) study of 40 argumentative essays written by Iranian graduate non-English majors revealed that the students were able to use various cohesive devices and used lexical devices the most frequently, followed by reference and conjunction devices respectively. These findings were confirmed by Zhang's (2010) analysis of 100 test essays written by Chinese undergraduate EFL students. In addition, Liu and Braine (2005) found that students' writing scores were significantly correlated with the number of lexical devices and the total number of cohesive devices used in the writing. Zhang (2010) found that lexical synonymy and personal references were good predictors for students' composition scores though the latter was weakly positively related to the total number of cohesive ties used. Nevertheless, no significant relationship between the number of cohesive devices used and quality of writing was revealed in Dastjerdi and Samian (2011).

Making use of a learner corpus compiled from 2006 to 2009 at Seoul National University which consisted of Korean students' academic English writing of narratives, descriptions and arguments on various topics, Chou and Shin (2014) explored the differences in the use of reference and conjunction cohesion among students at the mid-intermediate, high-intermediate and advanced levels of communicative competence. The results showed that students at the high-intermediate level relied on cohesive devices significantly more than the other two groups, and that students at the high-intermediate and advanced levels used demonstrative pronouns significantly more than those at the mid-intermediate level. The study also revealed that the students tended to use sentence transitions less as their proficiency increased, although the advanced students overused transitions more than native speakers. Mohamed's (2016) study of 50 argumentative essays produced by Malaysian undergraduate ESL students showed that the students had both appropriate and inappropriate use of conjunctions in their essays. The students' inappropriate use was due to their lack of exposure to different categories of conjunctions and difficulties in using conjunctions that have similar meanings, as remarked by the interviewees of the study. This was consistent with Liu and Braine's (2005) study which revealed that the Chinese undergraduate EFL students had problems in using lexical devices. Park (2013) compared Korean university EFL students' use of conjunctive adverbials (CAs) in argumentative writing with that in American students' writings in relation to proficiency level. The results showed that the Korean writers in all three proficiency groups greatly overused CAs, who used sequential and additive types six times more than the native writers did. The study also found that the Korean writers, especially the lowest-level students, heavily depended on sentence-initial positioning and had both form-related and usage-related misuse of CAs.

## Research Questions

As previously discussed, cohesion is one of the most crucial defining features of the quality of writing and has been widely researched. The current literature shows that there are mixed or even contradictory findings about the use and role of different types of cohesive devices in ESL/EFL students' writing. Moreover, little research has examined the differences in the use of cohesive devices in writing of varying quality or by writers with varying degrees of instruction. In addition, many studies show that ESL/EFL students at differing proficiency levels demonstrate problematic use of different kinds of cohesive devices in their writing. All these further confirm the complexity of cohesion in writing and justify more and continuous research on cohesion in ESL/EFL students' writing. Meanwhile, writing argumentative essays is commonly required in higher education because it helps cultivate critical and innovative thinking by pushing students to think and argue critically and logically based on actual facts, knowledge or solid data (Mohamed, 2016). Cohesion is a critical contributor to the quality of argument in that it strongly supports the interrelationship between sentences in argumentative writing. For these reasons, the present paper aimed to investigate the use of references and conjunctions in argumentative essays composed by Chinese undergraduate EFL students in relation to essays of varying quality. To achieve this purpose, the following questions were formulated:

- (1) How frequently do Chinese undergraduate EFL students use references and conjunctions in their English argumentative essays?
- (2) What is the difference in the use of references and conjunctions in the English argumentative essays of varying quality?
- (3) How is the use of references and conjunction related to the quality of English argumentative writing?
- (4) Do Chinese undergraduate EFL students have any problems with the use of references and conjunctions in their English argumentative essays? What are they?

## Research Design

### Context

The present study was conducted in a state-owned, research-oriented university in Beijing. Since English is now the leading language in the academia, the course Academic English Writing is offered to second-year students who want to get prepared to publish and share research products in international journals in the future. It is a 16-week course for second-year students, which trains students how to write argumentative and expository essays in terms of key elements of writing such as text structure, thesis statement, topic sentence, use of evidence, cohesive markers, and coherence. Following classroom instruction is the requirement of writing short texts in class and long essays to be submitted online after class. After each submission, course instructors give feedback online and organize open and individual discussion of the submission in class. In total, the course requires students to produce two long argumentative and two long expository essays, with each having around 400 words. Since few studies in the current literature examined the use of cohesive ties by students with instruction, these students became the target population of the present research.

### Participants

A total of 116 second-year undergraduate EFL students from four intact classes who were enrolled in Academic English Writing participated in the present study. With an age range of 18-21 and an average

age of 19.2, the students were intermediate-to-advanced EFL learners and came from various disciplines like architecture, mathematics, civil engineering, physics and international education.

## **Materials**

### **Student texts**

To have a better understanding of students' use of cohesive devices in their writing, the second argumentative essay on global warming was selected for analyses in the present study. Of the finally connected 116 essays, all generally conformed to the basic norms of argumentative writing and were allowed by the writers to be used for the study. With a mean of 404.06 words, the essays ranged from 277 to 545 words long and had a total of 45,700 words.

### **Writing scores**

The students' argumentative writing scores were collected as indicators of the quality of their writing. Each essay was scored holistically on the scale of 1-15 in terms of organization, thesis statement, use of evidence, cohesion and coherence, and grammar and vocabulary.

## **Data Collection and Analysis**

All the argumentative texts were collected during the 8<sup>th</sup> week of a 16-week semester when the students finished them as a course assignment. Each text was then holistically scored by two raters. Both raters were instructors of the same course with teaching experiences of at least three years each. With an inter-rater reliability of .923, the two scores were averaged and the result was used as the final score of each text.

As previously described, Halliday and Hasan (1976) classified reference cohesion into three types—Personal, demonstrative, and comparative, which was later expanded to cover indefinite, reflexive and intensive references (Al-Jarf, 2001; Hameed, 2008; Ismail & Linda, 2018). This expanded six-type reference scheme was used to analyze the collected data in the present study: Personal, demonstrative, comparative, indefinite, reflexive and intensive references. Similarly, the expanded types of conjunctions used in Gerrot and Wignell (1994) based on Halliday and Hasan's (1976) classification was adopted in the present study: Additive, adversative, casual, temporal, and continuative. To better identify the functions of conjunctions, a new type—clause connectives (used to connect a clause) was added in the present study. Based on these two schemes, two raters manually coded the data (inter-rater reliability = .921) and then counted the frequency of the use of each type of reference and conjunction cohesion (see Tables 2 & 3). The quantitative results were then analyzed via SPSS 20. Means and standard deviations of references and conjunctions were calculated to identify their patterns in the students' writing. ANOVA analyses were conducted to explore differences in the use of references and conjunctions among essays of varying quality. Then correlation and regression analyses were run to explore the relationship between the use of references and conjunctions and writing quality. The use of references and conjunctions was also qualitatively analyzed to explore whether and what problems the students had in using them in their writing.

## Results

### Overall use of references and conjunctions in the essays

Table 1 presents the means, standard deviations of the writing scores, reference and conjunction devices used in the writing, which shows that the skewness and kurtosis values of all variables except for intensive references and continuative conjunctions were below 10, indicating small variance in the use of different types of references and conjunctions except for the two in the argumentative essays.

TABLE 1  
*Statistical Analyses of Reference and Conjunction Devices (N = 116)*

| Variables                   | Mean   | SD    | Range   | Skewness | Kurtosis | Sum and percentage | Most frequently used items |
|-----------------------------|--------|-------|---------|----------|----------|--------------------|----------------------------|
| Writing Score               | 11.16  | 1.64  | 5-15    | -.640    | 1.267    |                    |                            |
| Number of words             | 404.06 | 60.77 | 277-545 | .222     | -.592    | 45,700             |                            |
| Personal                    | 8.04   | 5.32  | 1-27    | .973     | 1.027    | 933/16.25%         | 'it', 'we', 'their'        |
| Demonstrative               | 30.20  | 11.03 | 0-66    | -.017    | .898     | 3473/60.49%        | 'the', 'this',<br>'these'  |
| Comparative                 | 5.81   | 4.10  | 0-19    | .938     | .644     | 674/11.74%         | 'more/better',<br>'other'  |
| Reflexive                   | .09    | .35   | 0-2     | 3.962    | 16.237   | 11/0.19%           |                            |
| Intensive                   | .03    | .16   | 0-1     | 6.053    | 35.245   | 3/0.05%            |                            |
| Indefinite                  | 5.58   | 3.75  | 0-21    | 1.094    | 2.210    | 647/11.27%         | 'some', 'many',<br>'all'   |
| Additive                    | 8.66   | 5.04  | 1-22    | .430     | -.709    | 1005/33.78%        | 'and', 'also'              |
| Adversative                 | 2.17   | 1.64  | 0-7     | .711     | -.064    | 252/8.47%          | 'but', 'however'           |
| Causal                      | 1.97   | 1.52  | 0-7     | .769     | .222     | 228/7.66%          | 'so', 'due to'             |
| Temporal                    | 1.75   | 1.62  | 0-10    | 1.863    | 5.684    | 203/6.82%          | 'nowadays',<br>'now'       |
| Continuative                | .03    | .18   | 0-1     | 5.170    | 25.158   | 4/0.13%            |                            |
| Clause connectives          | 11.06  | 4.49  | 3-23    | .486     | -.163    | 1283/43.13%        | 'that', 'which'            |
| References                  | 49.66  | 14.02 | 4-103   | .165     | 1.960    | 5741/65.87%        |                            |
| Conjunctions                | 25.65  | 8.71  | 9-44    | .342     | -.680    | 2975/34.13%        |                            |
| References and conjunctions | 75.15  | 17.98 | 30-126  | .381     | -.270    | 8716/100%          |                            |

As shown in Table 1, the collected 116 essays ranged from 277 words to 545 words in length, with a total number of 45,700 words, and a total of 8741 reference and conjunction devices were identified in them, with a frequency of 19.13 reference and conjunction devices per 100 words. Table 1 also shows that the students utilized references (65.87%) much more than conjunctions (34.13%) in their writing. Of references, demonstrative references had the largest percentage (60.49%), followed by personal (16.25%), comparative (11.74%) and indefinite (11.27%) references respectively, reflexive (0.19%) and intensive (0.05%) references were hardly used. Of conjunctions, clause connectives enjoyed the highest percentage (43.13%), followed by additive (33.78%), adversative (8.47%), causal (7.66%) and temporal (6.82%) conjunctions respectively, continuative conjunctions were hardly employed (0.13%).

As summarized in Table 2, the most frequently used personal references were 'it' as subject (mean = 2.19), 'we' (mean = 1.92), 'their' (mean = .81), 'they' (mean = .72), 'our' (mean = .73), 'it' as object (mean = .39), 'us' (mean = .35) and 'them' (mean = .22). The most frequently used comparative references were 'more/better' (mean = 4.22), 'other' (mean = .30), 'like' (mean = .28), 'as' (mean = .27), 'so' (mean = .22) and 'same' (mean = .21). The most frequently used indefinite references were 'some' (mean = 1.17), 'many' (mean = 1.13), 'all' (mean = .62), 'one' (mean = .38), 'most' (mean = .35), 'every' (mean = .34), 'other' (mean = .34) and 'much' (mean = .30). The most frequently used demonstrative references were 'the' (mean = 27.76), 'this' (mean = 1.02), 'these' (mean = .58), 'there' (mean = .31) and

‘that’ (mean = .30). Meanwhile, the least frequently used references included ‘your’, ‘her’, ‘additional’, ‘themselves’, ‘either’, ‘somebody’ and ‘on one’, with all having a mean of .009.

TABLE 2  
*Reference Devices Used in the Argumentative Writing*

| Reference devices | items      | Mean | SD   | Range   | Reference devices | items       | Mean  | SD    | Range |
|-------------------|------------|------|------|---------|-------------------|-------------|-------|-------|-------|
| Personal          | I          | .198 | .69  | 0-6     | Reflexive         | more/better | 4.22  | 3.43  | 0-16  |
|                   | me         | 0    | 0    | 0-0     |                   | itself      | .026  | .21   | 0-2   |
|                   | you        | .035 | .23  | 0-2     |                   | ourselves   | .043  | .20   | 0-1   |
|                   | we         | 1.92 | 2.22 | 0-10    | Intensive         | themselves  | .026  | .16   | 0-1   |
|                   | us         | .35  | .897 | 0-7     |                   | itself      | .017  | .13   | 0-1   |
|                   | he         | .035 | .23  | 0-2     | Indefinite        | themselves  | .009  | .09   | 0-1   |
|                   | him        | 0    | 0    | 0       |                   | each        | .14   | .39   | 0-2   |
|                   | she        | .017 | .19  | 0-2     |                   | every       | .34   | .75   | 0-5   |
|                   | her        | .009 | .09  | 0-1     |                   | either      | .009  | .09   | 0-1   |
|                   | they       | .72  | 1.08 | 0-5     |                   | one         | .38   | .77   | 0-4   |
|                   | them       | .22  | .49  | 0-2     |                   | other       | .34   | .65   | 0-3   |
|                   | it-subject | 2.19 | 2.07 | 0-9     |                   | another     | .16   | .37   | 0-1   |
|                   | it-object  | .39  | .93  | 0-6     |                   | much        | .30   | .89   | 0-6   |
|                   | mine       | 0    | 0    | 0       |                   | somebody    | .009  | .09   | 0-1   |
|                   | my         | .08  | .27  | 0-1     |                   | something   | .05   | .22   | 0-1   |
|                   | yours      | 0    | 0    | 0       | no one            | .009        | .09   | 0-1   |       |
|                   | your       | .009 | .09  | 0-1     | nothing           | .017        | .13   | 0-1   |       |
|                   | ours       | 0    | 0    | 0       | everybody         | .017        | .13   | 0-1   |       |
|                   | our        | .73  | 1.15 | 0-5     | everyone          | .05         | .22   | 0-1   |       |
|                   | his        | .03  | .29  | 0-3     | everything        | .009        | .09   | 0-1   |       |
| hers              | 0          | 0    | 0    | some    | 1.17              | 1.32        | 0-5   |       |       |
| her               | .009       | .09  | 0-1  | any     | .078              | .27         | 0-1   |       |       |
| theirs            | 0          | 0    | 0    | several | .06               | .33         | 0-3   |       |       |
| their             | .81        | 1.37 | 0-8  | ones    | .06               | .56         | 0-6   |       |       |
| its               | .29        | .60  | 0-3  | most    | .35               | .69         | 0-3   |       |       |
| Comparative       | same       | .21  | .47  | 0-2     | others            | .07         | .29   | 0-2   |       |
|                   | identical  | 0    | 0    | 0       | many              | 1.13        | 1.41  | 0-10  |       |
|                   | equal      | .03  | .16  | 0-1     | few               | .10         | .40   | 0-3   |       |
|                   | similar    | .017 | .13  | 0-1     | all               | .62         | 1.02  | 0-5   |       |
|                   | additional | .009 | .93  | 0-1     | Demonstrative     | both        | .09   | .28   | 0-1   |
|                   | equally    | .03  | .37  | 0-4     |                   | this        | 1.02  | 1.24  | 0-5   |
|                   | similarly  | 0    | 0    | 0       |                   | that        | .30   | .70   | 0-4   |
|                   | like       | .28  | .57  | 0-3     |                   | these       | .58   | .85   | 0-4   |
|                   | likewise   | 0    | 0    | 0       |                   | those       | .15   | .50   | 0-4   |
|                   | as         | .27  | .86  | 0-7     |                   | here        | .017  | .13   | 0-1   |
|                   | as if      | 0    | 0    | 0       |                   | there       | .31   | .81   | 0-4   |
|                   | so         | .22  | .51  | 0-2     |                   | now         | .15   | .48   | 0-3   |
|                   | such       | .09  | .28  | 0-1     |                   | then        | .03   | .18   | 0-1   |
|                   | other      | .30  | .70  | 0-3     |                   | the         | 27.76 | 10.88 | 0-64  |
|                   | different  | .15  | .44  | 0-3     |                   |             |       |       |       |

Table 3 shows that the most frequently used additive conjunctions were ‘and’ (mean = 5.68), ‘also’ (mean = .78), ‘such as’ (mean = .57) and ‘for example’ (mean = .48). The most frequently used adversative conjunctions were ‘but’ (mean = 1.04), ‘however’ (mean = .54) and ‘on the other hand’ (mean = .14). The most frequently used causal conjunctions were ‘so’ (mean = .59), ‘due to’ (mean = .38), ‘therefore’ (mean = .23) and ‘thus’ (mean = .21). The most frequently used temporal conjunctions were ‘nowadays’ (mean = .22), ‘now’ (mean = .18), ‘then’ (mean = .129), ‘currently’ (mean = .129), ‘first’ (mean = .12) and ‘in conclusion’ (mean = .12). The most frequently used clause connectives were ‘that’ (mean = 5.21), ‘which’ (mean = 1.72), ‘because’ (mean = .72), ‘if’ (mean = .569) and ‘when’ (mean = .48). The following are some examples taken from the students’ texts. The least frequently used conjunctions were ‘additionally’, ‘lastly’, ‘last’, ‘to sum up’, ‘to conclude’, ‘in spite of’, ‘so as’, ‘then’, ‘for this reason’, ‘on top of’, ‘next’, ‘after all’, ‘whereas’, ‘as long as’ and ‘unless’, with all having a mean of .009.

TABLE 3  
*Conjunction Devices Used in the Argumentative Writing*

| Conjunction devices | items        | Mean | SD   | Range        | Conjunction devices | items      | Mean | SD   | Range |  |
|---------------------|--------------|------|------|--------------|---------------------|------------|------|------|-------|--|
| Additive            | additionally | .009 | .09  | 0-1          | Conjunctive         | secondly   | .069 | .25  | 0-1   |  |
|                     | in addition  | .06  | .24  | 0-1          |                     | last       | .009 | .09  | 0-1   |  |
|                     | also         | .78  | .87  | 0-3          |                     | lastly     | .009 | .09  | 0-1   |  |
|                     | and          | 5.68 | 4.15 | 0-17         |                     | last but   | .03  | .18  | 0-1   |  |
|                     |              |      |      |              |                     | not least  |      |      |       |  |
|                     | as well as   | .078 | .299 | 0-2          |                     | at last    | .017 | .13  | 0-1   |  |
|                     | besides      | .19  | .44  | 0-2          |                     | finally    | .04  | .20  | 0-1   |  |
|                     | for example  | .48  | .63  | 0-3          |                     | as seen    | .078 | .27  | 0-1   |  |
|                     | for instance | .05  | .22  | 0-1          |                     | in         | .12  | .33  | 0-1   |  |
|                     |              |      |      |              |                     | conclusion |      |      |       |  |
|                     | such as      | .57  | .85  | 0-4          |                     | in sum     | .017 | .13  | 0-1   |  |
|                     | furthermore  | .078 | .27  | 0-1          |                     | to         | .017 | .13  | 0-1   |  |
|                     |              |      |      |              |                     | summarize  |      |      |       |  |
|                     | moreover     | .086 | .31  | 0-2          |                     | to         | .009 | .09  | 0-1   |  |
|                     |              |      |      |              |                     | conclude   |      |      |       |  |
|                     | what's more  | .19  | .42  | 0-2          |                     | to sum up  | .009 | .09  | 0-1   |  |
|                     | in another   | .017 | .13  | 0-1          |                     | in a       | .009 | .09  | 0-1   |  |
|                     | way          |      |      |              |                     | nutshell   |      |      |       |  |
|                     | in other     | .068 | .29  | 0-2          |                     | as         | .026 | .16  | 0-1   |  |
|                     | words        |      |      |              |                     | discussed  |      |      |       |  |
|                     |              |      |      | above        |                     |            |      |      |       |  |
| that is             | .03          | .16  | 0-1  | now          | .18                 | .43        | 0-2  |      |       |  |
| that is to say      | .03          | .21  | 0-2  | then         | .129                | .43        | 0-3  |      |       |  |
| or                  | .18          | .45  | 0-2  | at the       | .095                | .32        | 0-2  |      |       |  |
|                     |              |      |      | same time    |                     |            |      |      |       |  |
| if not ... then     | .017         | .13  | 0-1  | meanwhile    | .078                | .27        | 0-1  |      |       |  |
| like                | .017         | .13  | 0-1  | next         | .009                | .09        | 0-1  |      |       |  |
| especially          | .086         | .31  | 0-2  | up to now    | .026                | .16        | 0-1  |      |       |  |
| but                 | 1.04         | 1.20 | 0-5  | earlier      | .035                | .37        | 0-4  |      |       |  |
| however             | .54          | .85  | 0-4  | nowadays     | .22                 | .49        | 0-3  |      |       |  |
| nevertheless        | .078         | .27  | 0-1  | presently    | .026                | .16        | 0-1  |      |       |  |
| despite             | .017         | .13  | 0-1  | currently    | .129                | .49        | 0-4  |      |       |  |
| in spite of         | .009         | .09  | 0-1  | in a word    | .04                 | .20        | 0-1  |      |       |  |
| in fact             | .069         | .25  | 0-1  | all in all   | .017                | .13        | 0-1  |      |       |  |
| actually            | .06          | .24  | 0-1  | since        | .40                 | .70        | 0-3  |      |       |  |
| on the other        | .14          | .35  | 0-1  | Continuative | of course           | .026       | .159 | 0-1  |       |  |
| hand                | .03          | .18  | 0-1  | after all    | .009                | .09        | 0-1  |      |       |  |
| in contrast         | .04          | .20  | 0-1  | Clause       | whereas             | .009       | .09  | 0-1  |       |  |
| on the              | .03          | .18  | 0-1  | connective   | because             | .72        | .95  | 0-4  |       |  |
| contrary            | .06          | .27  | 0-2  | since        | .09                 | .29        | 0-1  |      |       |  |
| instead             | 0            | 0    | 0    | for          | .078                | .299       | 0-2  |      |       |  |
| rather              | .03          | .18  | 0-1  | while        | .17                 | .44        | 0-2  |      |       |  |
| by contrast         | .009         | .09  | 0-1  | though       | .086                | .34        | 0-2  |      |       |  |
| except              |              |      |      |              |                     |            |      |      |       |  |
| yet                 |              |      |      |              |                     |            |      |      |       |  |
| Causal              | due to       | .38  | .74  | 0-4          | although            | .21        | .45  | 0-2  |       |  |
|                     | so           | .59  | .85  | 0-4          | so that             | .069       | .29  | 0-2  |       |  |
|                     | so as        | .009 | .09  | 0-1          | as                  | .043       | .20  | 0-1  |       |  |
|                     | thus         | .21  | .48  | 0-2          | after               | .18        | .68  | 0-6  |       |  |
|                     | hence        | .05  | .29  | 0-2          | before              | .26        | .62  | 0-4  |       |  |
|                     | then         | .009 | .09  | 0-1          | while               | .06        | .27  | 0-2  |       |  |
|                     | therefore    | .23  | .52  | 0-2          | when                | .48        | .80  | 0-4  |       |  |
|                     | resulting    | .11  | .34  | 0-2          | as long as          | .009       | .09  | 0-1  |       |  |
|                     | as a result  | .198 | .46  | 0-2          | unless              | .009       | .09  | 0-1  |       |  |
|                     | consequently | .04  | .20  | 0-1          | if                  | .569       | .96  | 0-5  |       |  |
|                     | in           | .04  | .24  | 0-2          | even if             | .035       | .18  | 0-1  |       |  |
|                     | consequence  |      |      |              |                     |            |      |      |       |  |
|                     | for that     | .06  | .24  | 0-1          | that                | 5.21       | 2.47 | 1-13 |       |  |
|                     | reason       |      |      |              |                     |            |      |      |       |  |
| for this            | .009         | .09  | 0-1  | how          | .069                | .29        | 0-2  |      |       |  |



|          |              |      |     |     |       |      |      |     |
|----------|--------------|------|-----|-----|-------|------|------|-----|
|          | reason       |      |     |     |       |      |      |     |
|          | with         | .009 | .09 | 0-1 | who   | .155 | .41  | 0-2 |
|          | following    |      |     |     |       |      |      |     |
|          | reasons      |      |     |     |       |      |      |     |
|          | thanks to    | .017 | .13 | 0-1 | what  | .28  | .72  | 0-6 |
| Temporal | first        | .12  | .33 | 0-1 | which | 1.72 | .152 | 0-8 |
|          | firstly      | .078 | .27 | 0-1 | why   | .086 | .31  | 0-2 |
|          | first of all | .03  | .18 | 0-1 | where | .026 | .16  | 0-1 |
|          | on top of    | .009 | .09 | 0-1 | whose | .043 | .20  | 0-1 |
|          | second       | .06  | .24 | 0-1 |       |      |      |     |

**Example 1:** Therefore **it** can be concluded that global warming has a negative impact on agricultural production for **it** damage soil, bring drought and break the existing ecological balance. ('it' as subject is a personal reference.)

**Example 2:** In West African Sahel, mesic species are retracting to areas of **higher** rainfall and **lower** temperature as their current habitats become not suitable for their living. ('higher' and 'lower' are comparative references.)

**Example 3:** **Every** country is affected by global warming **equally**, **though** in different ways. ('every' is an indefinite reference, 'equally' is a comparative reference, 'though' is an adversative conjunction.)

**Example 4:** Except **this**, biological phenology is badly affected by global warming. ('this' is a demonstrative reference.)

**Example 5:** **For example**, most products of APPLE are manufactured and assembled in developing countries **like** China and about 23.6 billion tons of carbon is directly discharged **there**. ('for example' and 'like' are additive conjunction, 'there' is a demonstrative reference.)

**Example 6:** .... **So** we should do **something** to protect **our** countries and **our** world from **its** harm. ('so' is a causal conjunction, 'something' is an indefinite reference, 'we', 'our' and 'its' are personal references.)

**Example 7:** **First**, **the** polar bear's sea activities have decreased. ('first' is a temporal conjunction, 'the' is a demonstrative reference.)

**Example 8:** **In addition**, **the** temperature rise speeds **the** photochemical reaction of atmosphere pollution, **which** causes ozone levels to increase, **resulting in** the human respiratory system to work abnormally. ('in addition' is an additive conjunction, 'which' is a clause connective, 'resulting in' is a causal conjunction, 'the' is a demonstrative reference.)

## Use of References and Conjunctions in Essays of Varying Quality

As seen from Table 1, with a mean score of 11.16 and a standard deviation of 1.64, the participants were generally at a similar level of writing English argumentative essays. To further examine whether there was any difference in the use of references and conjunctions in essays of varying quality, the essays were classified into three benches based on mean score  $\pm$  *SD* (i.e.,  $11.16 \pm 1.64$ ): 17 high quality essays with a score range of 12.8 to 15, 80 good quality essays with a score range of 9.52 to 12.8, and 19 low quality essays with a score range of 1 to 9.52. Then ANOVA (Duncan) analyses were run to examine the differences in the use of references and conjunctions in essays of varying quality, the results of which are reported in Table 4.

TABLE 4  
*Use of Reference and Conjunction Devices in Essays of Varying Quality*

| Cohesive Devices   | Low (N = 19) |      | Good (N = 80) |       | High (N = 17) |       | F     | p    | Places of sig. difference ( $p \leq .05$ ) |
|--------------------|--------------|------|---------------|-------|---------------|-------|-------|------|--|
|                    | Mean         | SD   | Mean          | SD    | Mean          | SD    |       |      |  |
| Personal           | 8.63         | 4.83 | 8.09          | 5.57  | 7.18          | 4.80  | .340  | .712 | /  |
| Demonstrative      | 30.68        | 8.53 | 30.63         | 11.82 | 27.65         | 9.80  | .530  | .590 | /  |
| Comparative        | 4.16         | 3.75 | 5.91          | 3.93  | 7.18          | 4.86  | 2.57  | .081 | 1&3  |
| Reflexive          | .105         | .32  | .113          | .39   | .000          | .000  | .738  | .480 | /  |
| Intensive          | .000         | .000 | .025          | .16   | .059          | .24   | .610  | .545 | /  |
| Indefinite         | 5.58         | 3.04 | 5.43          | 3.47  | 6.29          | 5.53  | .372  | .690 | /  |
| Additive           | 8.16         | 4.35 | 8.94          | 5.09  | 7.94          | 5.64  | .384  | .682 | /  |
| Adversative        | 2.32         | 1.45 | 2.13          | 1.74  | 2.24          | 1.44  | .116  | .890 | /  |
| Causal             | 1.47         | .96  | 2.13          | 1.57  | 1.76          | 1.71  | 1.599 | .207 | /  |
| Temporal           | 1.95         | 2.48 | 1.75          | 1.41  | 1.53          | 1.42  | .295  | .745 | /  |
| Continuative       | .000         | .000 | .05           | .22   | .000          | .000  | .923  | .400 | /  |
| Clause connectives | 11.42        | 4.99 | 10.78         | 4.53  | 12.00         | 3.79  | .590  | .558 | /  |
| References         | 49.16        | 9.18 | 50.06         | 15.32 | 48.35         | 12.64 | .117  | .890 | /  |
| Conjunctions       | 25.32        | 9.45 | 25.76         | 8.93  | 25.47         | 7.06  | .024  | .976 | /  |

Note. Low = low-quality essays; Good = good-quality essays; High = high-quality essays

Table 4 indicates that essays of varying quality generally had a similar use of different types of reference and conjunction devices. Comparison of the scores showed that the use of personal and demonstrative references and temporal conjunctions decreased as the essay quality increased, while the use of comparative and intensive references increased with the increase of the essay quality. Mixed findings were revealed about the use of other types of references and conjunctions: Good quality essays had the highest use of reflexive (mean = .113) but the lowest use of indefinite (mean = 5.43) references, and high-quality essays had the lowest use of reflexive (mean = .000) but the highest use of indefinite (mean = 6.29) references. Low quality essays had the highest use of adversative (mean = 2.32) but the lowest use of causal (mean = 1.47), good quality essays had the highest use of additive (mean = 8.94), causal (mean = 2.13) and continuative (mean = .05) conjunctions but the lowest use of adversative (mean = 2.13) conjunctions and clause connectives (mean = 10.78), and high-quality essays had the lowest use of additive conjunctions (mean = 7.94) but the highest use of clause connectives (mean = 12.00). Even so, statistically significant difference occurred only in the use of comparative references between low and high-quality essays, as evidenced by post-hoc ANOVA analyses reported in Table 4. Alternatively, high quality essays had significantly greater use of comparative references than low quality essays.

### Correlations between the Use of Reference and Conjunction Devices and Writing Quality

Table 5 reports the results of correlation analyses between writing scores and the use of references and conjunctions, which shows that comparative references were significantly positively related to the whole sample's writing scores ( $r = .209, p < .05$ ), and that reflexive references ( $r = -.546, p < .05$ ) were significantly negatively but indefinite references ( $r = .468, p < .05$ ) were significantly positively related to the scores of low-quality essays. Namely, the higher the writing score of the whole sample, the more comparative references were used in the writing; the higher the writing score of a low-quality essay, the fewer reflexive references yet the more indefinite references were used in the writing, or vice versa.

TABLE 5  
*Correlations between References and Conjunctions and Writing Scores*

|                    | Writing scores            |                                |                                 |                                 |
|--------------------|---------------------------|--------------------------------|---------------------------------|---------------------------------|
|                    | Whole sample<br>(N = 116) | Low-quality essays<br>(N = 19) | Good-quality essays<br>(N = 80) | High-quality essays<br>(N = 17) |
| Personal           | -.056                     | -.442                          | .146                            | .080                            |
| Demonstrative      | -.104                     | .023                           | -.153                           | .132                            |
| Comparative        | .209*                     | -.361                          | .165                            | .233                            |
| Reflexive          | -.078                     | -.546*                         | .112                            | .000                            |
| Intensive          | .130                      | .000                           | .103                            | .134                            |
| Indefinite         | .126                      | .468*                          | .150                            | .025                            |
| References         | -.005                     | -.222                          | .026                            | .236                            |
| Additive           | .026                      | .153                           | .069                            | -.174                           |
| Adversative        | -.066                     | -.405                          | -.050                           | .167                            |
| Causal             | .043                      | .127                           | -.158                           | .394                            |
| Temporal           | -.105                     | -.089                          | -.115                           | .089                            |
| Continuative       | .013                      | .000                           | -.006                           | .000                            |
| Clause connectives | .022                      | .000                           | .020                            | -.119                           |
| Conjunctions       | .002                      | -.003                          | -.006                           | -.055                           |

Note. \* =  $p < .05$ ; coefficient of determination: small =  $r \leq 0.1$ ; medium =  $r = 0.3$ ; large =  $r \geq 0.5$

Meanwhile, stepwise regression analyses were conducted to explore predictors for writing scores. The results are summarized in Table 6, which shows that the analyses produced 1 model for the scores of the whole sample and low-quality essays respectively but no model for those of good- and high-quality essays. Comparative references were a good positive predictor for the whole sample's writing scores ( $\beta = .210$ ,  $t = 2.248$ ,  $p = .027$ ), and reflexive references were a good negative predictor for low-quality essays' scores ( $\beta = -.546$ ,  $t = -2.68$ ,  $p = .016$ ), largely consistent with the results of correlation analyses.

TABLE 6  
*Multiple Regression Coefficients and Significance of Predictors for Performance in English*

|                | Whole sample       | Comparative references |      |         |        |      |       |               |
|----------------|--------------------|------------------------|------|---------|--------|------|-------|---------------|
|                |                    | R square change        | $p$  | $\beta$ | $t$    | P    | VIF   | Cohen's $f^2$ |
| Writing scores |                    | .044                   | .027 | .210    | 2.248* | .027 | 1.000 | 0.05          |
|                |                    | Reflexive references   |      |         |        |      |       |               |
|                | Low quality essays | R square change        | $p$  | $\beta$ | $t$    | P    | VIF   | Cohen's $f^2$ |
|                |                    | .298                   | .016 | -.546   | -2.68* | .016 | 1.000 | 0.42          |

Notes. \*\* =  $p \leq .01$ ; \* =  $p \leq .05$

Effect size of Cohen's  $f^2$ : small =  $f^2 \leq .02$ ; medium =  $f^2 = .15$ ; large =  $f^2 \geq .35$  (Cohen, 1988)

## Problematic Use of References and Conjunctions

Based on the framework in Ong (2011), misuse, unnecessary use, omission, redundant repetition and wrong use of references and conjunctions were all counted as inappropriate/problematic use of references and conjunctions in the essays in the present study. The results are summarized in Table 6, which shows that the students generally had a good knowledge of cohesive devices and were able to use both references and conjunctions appropriately. Meanwhile, they demonstrated some inappropriate/problematic use of all types of references and conjunctions except for reflexive and intensive references and continuative conjunction in their essays, largely due to the small number of such devices used by the students in their essays.

As seen from Table 7, the highest percentage of inappropriate/problematic use of references was demonstrative references (3.1%), followed by indefinite (2.6%), comparative (2.5%), and personal (1.8%) references respectively. The following are some good examples.

**Example 9:** Because global warming will make the ice in Antarctic and Arctic melt and it will be easier for **our** human to get there and explore **there**.

In example 9, ‘our’ was wrongly used, which should be ‘us’ to form a cohesive connection with ‘human[s]’. And the second ‘there’ was redundant.

**Example 10:** At the same time, global warming rises the temperature at night and in the winter, greatly extend the life period of mosquitoes and region, the incidence of malaria spread on it, scarlet fever, jaundice, encephalitis and other infectious disease rate.

In example 10, it remains unclear what ‘it’ referred to, failing to build any connection with any expression in the sentence and thus causing confusion in meaning.

**Example 11:** There is no special change in the solar cycle variations, the variations remained **same** from 1975 to 2005, according to the data from NOAA (National Oceanic and Atmospheric Administration).

In example 11, ‘same’ was partially correctly used, whose correct form should be ‘the same’, indicating comparison between the present and the past.

TABLE 7  
*Problematic Use of References and Conjunctions*

|                    | Total sum | Appropriate use | Inappropriate use | Typical examples of inappropriately used items |
|--------------------|-----------|-----------------|-------------------|--|
| Personal           | 933       | 916/98.2%       | 17/1.8%           | ‘them’, ‘our’, ‘it’                            |
| Demonstrative      | 3473      | 3366/96.9%      | 107/3.1%          | ‘this’, ‘these’, ‘the’, ‘there’                |
| Comparative        | 674       | 657/97.5%       | 17/2.5 %          | ‘like’, ‘same’, ‘other’                        |
| Reflexive          | 11        |                 | 0                 |  |
| Intensive          | 3         |                 | 0                 |  |
| Indefinite         | 647       | 630/97.4%       | 17/2.6%           | ‘other’, ‘many’, ‘all’                         |
| Additive           | 1005      | 962/95.7%       | 43/4.3%           | ‘also’, ‘and’, ‘such as’                       |
| Adversative        | 252       | 246/97.6%       | 6/2.4%            | ‘but’, ‘however’, ‘on the other hand’          |
| Causal             | 228       | 219/96.1%       | 9/3.9%            | ‘so’, ‘thus’, ‘due to’                         |
| Temporal           | 203       | 196/96.6%       | 7/3.4%            | ‘then’, ‘since’, ‘in conclusion’               |
| Continuative       | 4         |                 | 0                 |  |
| Clause connectives | 1283      | 1229/95.8%      | 54/4.2%           | ‘that’, ‘which’                                |

Table 7 also signifies that the highest percentage of inappropriate/problematic use of conjunctions was additive conjunctions (4.3%), followed by clause connectives (4.2%), causal (3.9%), temporal (3.4%), and adversative (2.4%) conjunctions respectively. The following are some examples.

**Example 12:** As seen, global warming can benefit us in many ways **even** it may have some harmful influence as we all know.

In example 12, ‘even’ should be ‘even if’ to work as a clause connective to build a semantic relationship between the two clauses, while ‘even’ could not do so.

**Example 13:** In addition, “Glacial Gates”, and “Amazon Rainforest Gates” **also** damage the reputation of the IPCC and make global warming a joke.

In example 13, ‘also’ was redundant because there was already a conjunction ‘in addition’ to show addition at the beginning.

**Example 14:** The urgent thing we should do is to maintain natural balance **so** we can protect ourselves from global warming and make use of it.

Though ‘so’ can indicate a causal relationship between two independent clauses, it can’t build such a relationship between a dependent and an independent clause. Yet ‘so that’ can do so. Hence, ‘so’ was wrongly used in example 22, which should be the clause connective ‘so that’ to express result or purpose.

**Example 15:** As seen, global warming is a severe harm to human health. **But** over the past century, the average temperature of the earth has risen by 0.7°C, **while** the average temperature in the big cities has increased by 2 to 3°C, how terrible it is!

In example 15, there was no adversative meaning between the preceding sentence ‘..., global warming is a severe harm to human health’ and the following one ‘... over the past century, the average temperature of the earth has risen by 0.7°C, ...’, thus ‘but’ was inappropriately used here; so was ‘while’.

## Discussion

The present study showed that the students employed a total of 8741 and a frequency of 19.13 reference and conjunction devices per 100 words in the collected 116 essays of 45,700 words in total. The study also revealed that the students had a high percentage (more than 90%) of proper use of different kinds of references and conjunctions. These findings clearly indicate that the students had a good knowledge of reference and conjunction devices and were able to use them effectively in their argumentative writing, as found in Dastjerdi and Samian (2011), Liu and Braine (2005) and Zhang (2010). This might be because the participants were instructed about cohesive devices and trained to write argumentative essays effectively, as done in Warna et al. (2019). Another possible reason might be that the participants were generally intermediate to advanced ESL/EFL students. Similar to their peers in other ESL/EFL contexts (Dastjerdi & Samian, 2011), the participants in the present research also tended to use such references as ‘them’, ‘same’ and such conjunctions as ‘and’, ‘for example’, ‘but’, ‘such as’ and ‘also’ frequently in their argumentative essays. This might be because these items, as highly frequently used expressions, were easy for ESL/EFL students to acquire, while less frequently used items like ‘instead’, ‘consequently’ and ‘hence’ were only occasionally or seldom utilized in the essays. Even so, the present study found that the students had misuse, unnecessary use, omission, redundant repetition and wrong use of different types of references and conjunctions, though generally with a percentage lower than 4.2%, as found in Nasser, (2020), Mohamed (2016), Chou and Shin (2014) and Park (2013). This further justifies continuous research on reference and conjunction devices in SL/FL students’ writing. Only with increased awareness of and exposure to cohesive devices may SL/FL students be able to compose cohesive and coherent writing of higher quality in the language (Mohamed, 2016)

The study also revealed that that the students utilized references (65.87%) much more than conjunctions (34.13%) in their argumentative essays, similar to the finding in several studies in the current literature (Warna et al., 2019; Yang & Sun, 2012) though (slightly) different from that in Dastjerdi and Samian (2011) and Zhang (2010). This might be attributed to two major reasons: a) the present study only examined the use of references and conjunctions while the other studies explored the use of more or all types of cohesive devices in students’ writing, b) the number of student texts collected in the current literature varied from 40 to 116. Of references, demonstrative references had the largest percentage, followed by personal, comparative and indefinite references respectively, reflexive and intensive references were hardly used, largely similar to that in Dastjerdi and Samian (2011) and Liu and Braine (2005). This was largely attributed to the predominant use of ‘the’ (mean = 27.76) in the essays and the argumentative nature of the essays whose writers used such references as ‘this’, ‘these’, ‘we’, ‘they’ and ‘it’ to be objective and impersonal. Understandably, no writers used personal references like ‘me’, ‘him’ and ‘my’ to indicate anything subjective. Of conjunctions, clause connectives enjoyed the highest percentage, followed by additive, adversative, causal and temporal conjunctions respectively, continuative conjunctions were seldom used, similar to the findings in Liu and Braine (2005) and Chanyoo (2018).

This might be largely attributed to the argumentative nature of the essays whose writers resorted to various strategies to connect diverse types of evidence to their arguments. Another possible reason was that the participants tended to write complex and compound sentences which required clause connectives in their essays. This yet needs to be further examined.

This study found that essays of varying quality generally had a similar use of different types of reference and conjunction devices. Although essays of higher quality tended to use personal and demonstrative references and temporal conjunctions less and comparative and intensive references more, high-quality essays only had significantly greater use of comparative references than low-quality essays. This finding was partially consistent with that in Chou and Shin (2014) which found that more proficient students used demonstrative pronouns significantly more than less proficient students. Since not much research is available on the use of cohesive devices used by students at different SL/FL proficiency levels in essays of varying quality, this is worth research in future studies.

Similar to Liu and Braine (2005), Zhang (2010), Dastjerdi and Samian (2011) and Yang and Sun (2012), the present study did not reveal any significant relationship between argumentative essay scores and the total number of references or conjunctions used in the essays. Nevertheless, the present study revealed a significant relation between comparative references and the whole sample's writing scores as well as a significant relation between reflexive references and indefinite references and low-quality essay scores. Regression analyses also showed that comparative references were a positive predictor for the whole sample's writing scores and reflexive references a negative predictor for low quality essay scores, different from Zhang's (2010) study which found that personal references were a good predictor for writing scores. This indicates that the use of references does affect the quality of writing produced by ESL/EFL students. However, as regression analyses have been seldom adopted in studies (Zhang, 2010), this finding needs to be further confirmed.

## Conclusion

The present study investigated the use of references and conjunctions in argumentative essays written by Chinese university EFL students. The study revealed the following major findings:

- (1) the participants generally had a relatively high use of references and conjunctions in their essays, used references more than conjunctions and tended to use demonstrative references and clause connectives and additive conjunctions most frequently in their argumentative essays,
- (2) high-quality essays had significantly more frequent use of comparative references than low quality essays,
- (3) comparative references were a positive predictor for the whole sample's writing scores and reflexive references a negative predictor for low quality essay scores, and
- (4) the participants generally had a proper use of different kinds of references and conjunctions and tended to use such references as 'them' and 'same' and such conjunctions as 'and' and 'but' frequently in their argumentative essays, with a small percentage of problematic use of different types of references and conjunctions in their writing.

These findings clearly suggest that the use of references and conjunctions is an important factor affecting the quality of argumentative writing produced by ESL/EFL students. As discussed in Halldiay and Hasan (1976) and Warna et al. (2019), cohesion is the fundamental quality of writing. The ability to comprehend and write English texts effectively highly depends on the appropriate use of cohesive devices (Hasannejad et al., 2012). Consequently, ESL/EFL students should possess the ability to appropriately use reference and conjunction devices, the important components of cohesion.

Thanks to relatively high proficiency in English (intermediate English proficiency) and classroom instruction and practice, the participants in the present research demonstrated their ability to appropriately use references and conjunctions. Even so, they still had certain difficulty in using them properly. It is thus

important for ESL/EFL students to learn to use cohesive devices in their writing. Nevertheless, this is a long process that requires explicit instruction and much practice, especially for SL/FL students, in that it is even challenging for native speakers to learn to express their ideas in writing coherently and accurately (Celce-Murcia, 2001). Instructors should instruct and train ESL/EFL students to use references and conjunctions as well as other types of cohesive devices as textual elements to connect and organize linguistic units and ideas to produce good writing in English (Dastjerdi & Samian, 2011; Hamed, 2014; Hasannejad et al, 2012). Instructors can explain the definitions and types of cohesive devices with examples from reading texts, raise students' awareness of cohesion and familiarize them with cohesive devices with various practices such as identifying cohesive devices used in texts and using them in their own oral and written texts, and ask students to use specific types of cohesive devices in writing of varying lengths. It is especially so with references other than 'the' to both increase variety and build relations of different kinds. All these will result in more input of reference and conjunction devices to students, which facilitates textual cohesion in writing. As found in Lee (2020), the 35 students in regular high schools tended to produce more errors with third-person singulars and demonstratives and used less zero anaphora than the 29 students in an immersion school. The researcher attributed these differences mainly to immersion students' greater language input.

Concurrently, students themselves should be active to learn and practice using references and conjunctions as well as other cohesive devices in their writing via formal instruction, peer discussion and reading and writing practices. Only by doing these can students develop the ability to use cohesive devices appropriately in their writing and utterances and reduce their misuse and overuse of specific devices (Mohamed, 2016; Nasser, 2020; Park, 2013). It is also helpful for students to intentionally practice employing less frequently used conjunctions devices such as 'similarly', 'likewise', 'furthermore', 'despite', 'hence', 'thanks to' and 'whereas' to increase the variety of word choices in their writing apart from building differing logical relations among sentences (Chanyoo, 2018; Rahman, 2013). As widely agreed, essays with greater text cohesion as well as more organized explanations and exemplification, better grammar structure and more sophisticated lexical items are considered better (Kim & Crossley, 2018).

The present study collected a large number of student texts and examined the use of reference and conjunction devices in relation to essays of varying quality as well as the predicting effects of references and conjunctions on the quality of the collected essays, thus contributing to a better understanding of the use and role of cohesive devices in writing. Nevertheless, the numbers of high- and low-quality essays were too small (17 and 19 respectively) to generalize the findings to other similar ESL/EFL contexts. More student texts should be collected in future studies which examine differences in the use of references and conjunctions as well as other cohesive devices among essays of varying quality. However, considering the complex and time-consuming nature of coding and analyzing the data, it is ideal to combine manual work and technology to reveal general patterns and specific use of reference and conjunction ties in student texts. Moreover, as long as objects are described in texts, the definite article 'the' is often used to build logical relations throughout the texts, as happened in the present research and probably in other studies as well. Consequently, it may be interesting to examine the patterns as well as the use of specific reference items except for 'the' in relation to other types of cohesion and quality of writing. A different picture may be revealed then, which can enlighten SL/FL teachers and students in specific ways. Similarly, it is equally interesting to investigate why some references and conjunctions are least frequently or even rarely used and how the use of them is related to quality of writing, genre of writing and students' proficiency in the target language. In addition, it is significant to explore the effects of instruction and practice on the use of references and conjunctions as well as other cohesive ties in students' writing. The results will be all be conducive to the teaching and learning of SL/FL writing.

### **The Author**

*Meihua Liu* is professor at the Department of Foreign Languages and Literatures, Tsinghua University,

China. Her research interests mainly cover reticence and anxiety, L2 motivation, FL writing and international education. Her recent publications include “Foreign language classroom anxiety, gender, discipline, and English test performance: A cross-lagged regression study” (*The Asia-Pacific Education Researcher*, 2021) and “Testing Effects of Foreign Language Listening Anxiety on Chinese University Students’ English Listening Test Performance” (*Frontiers in Psychology*, 2021).

Department of Foreign Languages and Literatures  
Tsinghua University, Beijing 100084, China  
Tel: +86-10-62772954  
Email: liumeihua@mail.tsinghua.edu.cn

## References

- Adiantika, H. N. (2015). Cohesive devices in EFL students’ expository writing. *English Review: Journal of English Education*, 4(1), 94-102. <https://doi.org/10.25134/erjee.v4i1.316>
- Ajideh, P. (2007). Lexical chains or semantic networks as effective top-down ore-reading activities. *The Journal of Asia TEFL*, 4(4), 93-109.
- Al-Jarf, R. S. (2001). Processing of cohesive ties by EFL Arab college students. *Foreign Language Annals*, 34, 141-151. <https://doi.org/10.1111/j.1944-9720.2001.tb02819.x>
- Alzankawi, M. (2017). Kuwaiti undergraduate problems with cohesion in EFL writing. In J. Rotschedl & K. Cembakova (Eds.) *Proceedings of the 33rd International Academic Conference, Vienna* (pp.44-55). International Institute of Social and Economic Sciences. <https://doi.org/10.20472/IAC.2017.33.003>
- Celce-Murcia, M. (Ed.). (2001). *Teaching English as a second or foreign language* (3<sup>rd</sup> ed.). Heinle & Heinle.
- Chanyoo, N. (2018). Cohesive devices and academic writing quality of Thai undergraduate students. *Journal of Language Teaching and Research*, 9(5), 994-1001. <https://doi.org/10.17507/jltr.0905.13>
- Cho, H. Y., & Shin, J. A. (2014). Cohesive devices in English writing textbooks and Korean learners’ English writings. *English Teaching*, 69(1), 41-59.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2<sup>nd</sup> ed.). Lawrence Erlbaum Associates.
- Crossley, S. A., Kyle, K., & McNamara, D. S. (2016). The development and use of cohesive devices in L2 writing and their relations to judgments of essay quality. *Journal of Second Language Writing*, 32, 1-16. <https://doi.org/10.1016/j.jslw.2016.01.003>
- Darweesh, A. D., & Kadhim, S. A. H. (2016). Iraqi EFL learners’ problems in using conjunctions as cohesive devices. *Journal of Education and Practice*, 7(11), 169-180.
- Dastjerdi, H. V., & Samian, S. H. (2011). Quality of Iranian EFL learners’ argumentative essays: Cohesive devices in focus. *Mediterranean Journal of Social Sciences*, 2(2), 65-76.
- Defazio, J., Jones, J., Tennant, F., & Hook, S. (2010). Academic literacy: The importance and impact of writing across the curriculum-a case study. *Journal of the Scholarship of Teaching and Learning*, 10(2), 34-47.
- Don, Z. M., & Srinivass, S. (2017). Conjunctive adjuncts in Malaysian undergraduate ESL essays: Frequency and manner of use. *Moderna Språk*, 1, 99-117.
- Gerrot, L., & Wignell, P. (1994). *Making sense of functional grammar*. Antipodean Educational Enterprises.
- Halliday, M. A. K., & Hasan, R. (1976). *Cohesion in English*. Longman.
- Hamed, M. (2014). Conjunctions in argumentative writing of Libyan tertiary students. *English Language Teaching*, 7(3), 108-120. <https://doi.org/10.5539/elt.v7n3p108>
- Hameed, H. T. (2008). Cohesion in texts: A discourse analysis of a news article in a magazine. *AL-Faith Journal*, 37, 81-114.



- Hasannejad, M. R, Assadi, N., & Kazemi, S. A. (2012). Substitution as a device of grammatical cohesion in English contexts. *The Journal of Applied Linguistics*, 5(1), 114-136.
- Hyland, K. (2006). English for academic purposes. Routledge.
- Ismail, N. M., & Linda, L. (2018). Cohesion in foreign language writing. *ETERNAL (English, Teaching, Learning, and Research Journal)*, 4(2), 147-156. <https://doi.org/10.24252/Eternal.V42.2018.A1>
- Kang, Y., Hwang, H. J., Nam, K., & Choi, Y. (2010). Comparison of teacher talk of Korean and native English-speaking teachers: On the efficiency of delivering content knowledge in EFL contexts. *The Journal of Asia TEFL*, 7(2), 1-28.
- Kim, M., & Crossley, S. A. (2018). Modeling second language writing quality: A structural equation investigation of lexical, syntactic, and cohesive features in source-based and independent writing. *Assessing Writing*, 37, 39-56. <https://doi.org/10.1016/j.asw.2018.03.002>
- Lai, Y. Y. (2008). *A corpus investigation of conjunctive use in the Taiwanese students' writing* [Unpublished master thesis]. Ming Chuan University.
- Lee, J. (2020). Analysis of referential cohesion in L2 written narratives within an English immersion education context. *The Journal of Asia TEFL*, 17(2), 493-507. <http://dx.doi.org/10.18823/asiatefl.2020.17.2.12.493>
- Liu, M., & Braine, G. (2005). Cohesive features in argumentative writing produced by Chinese undergraduates. *System*, 33(4), 623-636. <https://doi.org/10.1016/j.system.2005.02.002>
- Mohamed, N. (2016). Use of conjunctions in argumentative essay by ESL undergraduates. *e-Academia Journal UiTMT*, 5(1), 1-13.
- Nasser, A. N. A. (2020). Error analysis on the use of reference devices in argumentative and descriptive writings of Yemeni EFL learners at the University of Aden: A comparative case study. *International Journal of Language and Literary Studies*, 2(1), 192-198. <https://doi.org/10.36892/ijlls.v2i1.190>
- Ong, J. (2011). Investigating the use of cohesive devices by Chinese EFL learners. *The Asian EFL Journal Quarterly*, 11(3), 42-65.
- Park, Y. Y. (2013). How Korean EFL students use conjunctive adverbials in argumentative writing. *English Teaching*, 68(4), 263-284. <https://doi.org/10.15858/engtea.68.4.201312.263>
- Rahman, Z. A. A. A. (2013). The use of cohesive devices in descriptive writing by Omani student-teachers. *SAGE Open*, 3(4). <https://doi.org/10.1177/2158244013506715>
- Saputra, A., & Hakim, M. A. R. (2020). The usage of cohesive devices by high-achieving EFL students in writing argumentative essays. *Indonesian TESOL Journal*, 2(1), 42-58. <https://doi.org/10.24256/itj.v2i1.1227>
- Tanskanen, S. K. (2006). *Collaborating towards coherence: Lexical cohesion in English discourse*. John Benjamins.
- Wang, Z. (2015). An analysis of the development patterns of cohesive devices used in English majors' essay-writing. *The Journal of Henan Polytech University (Social Sciences)*, 11(3), 155-158, 176.
- Warna, D., Wijaya, B., Sartika, E., & Riznanda, W. A. (2019). Cohesive devices used in argumentative essays of undergraduate EFL students in Indonesia. *ENGLISH FRANCA: Academic Journal of English Language and Education*, 3(2), 125-147. <https://doi.org/10.29240/ef.v3i02.1164>
- Yang, W., & Sun, Y. (2012). The use of cohesive devices in argumentative writing by Chinese EFL learners at different proficiency levels. *Linguistics and Education*, 23(1), 31-48. <https://doi.org/10.1016/j.linged.2011.09.004>
- Yeom, S. (2016). Use of conjunctions as cohesive devices in Korean high school EFL learners' argumentative and descriptive essays. *Foreign Language Education Research*, 19, 19-43.
- Zhang, A. (2010). Use of cohesive ties in relation to the quality of compositions by Chinese college students. *Journal of Cambridge Studies*, 5(2), 78-86.

(Received December 28, 2020; Revised November 20, 2021; Accepted December 18, 2021)