An Investigation into the Development of Structure and Evidence Use in Argumentative Writing

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Abstract—This study aims to investigate EFL learners' argumentative writing based on structural elements in Toulmin model (1953, 2008). It also explores the overall use of evidence in supporting claims. It was found that claim and data were the basic structural elements used by Chinese EFL learners in constructing argumentative writing. The respective use of counterargument data and rebuttal was significantly correlated with the quality of argumentation. In argumentative reasoning, the types of evidence and the number of evidence used by participants were very limited. Logical analysis was found to be the most frequently used data to support claims. Less proficient learners' use of evidence was not effective or persuasive to produce valid argument. The findings provide useful insights into the instruction of argumentative writing for EFL teachers.

Index Terms—argumentative writing, evidence use, EFL learners

I. INTRODUCTION

Argumentative writing is a key component in one's development of academic competence, and is often taken as an indicator to show learners' language proficiency level in international exams, such as GRE, TOEFL, and IELTS. The ability to write argumentative essay effectively is regarded as a distinctive feature to tell proficient learners from less proficient learners in universities (Mitchell, 2000). There is also an increasing need for graduate students to present and support their arguments and evidence to publish in disciplinary content. Compared with L1 learners, L2 learners are confronted with more challenges and difficulties in completing argumentative writing tasks, both culturally and linguistically. To be specific, in addition to L2 learners' limited proficiency levels and lack of genre knowledge, their cultural and ideological backgrounds exert great influence on their L2 writing. For example, in western cultures, the premise of argumentation is the conflict between the beliefs and attitudes held by the writer and the readers (Foss & Griffin, 1995), thus argumentation is to convince the readers which is established on the basis of the rhetoric of Aristotle (Connor, 1996). However, under the influence of Confucian philosophy, the Chinese rhetoric emphasizes general harmony and strong cohesion in the society (Wu & Rubin, 2000), thus Chinese EFL writers may not be good at producing persuasive ideas in argumentation. Compared with a number of studies in the area of L2 writing, the research on L2 argumentative writing is not yet fully developed in spite of its important function in the development of L2 learners' writing competence (Hirvela, 2017).

L2 learners' performance on writing argumentative essays may be affected by their inadequate knowledge about the characteristics of English argumentative writing genre (Lunsford 2002; Wingate 2012). According to Toulmin (1958, 2003), argumentative writing should basically consist of three interconnected elements: claim, data, and warrant; and through further analysis, a secondary level of elements may exist in argumentative writing: qualifier, backing, and rebuttal. Toulmin's (1958, 2003) model of argumentative writing has gained a popularity in the research of L2 argumentative writing. Many studies focus on proving the positive relationship between the presence of specific components in the model and the overall quality of argumentative writing (e.g., Nussbaum & Kardash, 2005; Qin and Karabacak, 2010; Wolfe et al, 2009). For example, a higher quality of argumentative essay may be achieved through including more argumentative components in Toulmin model (Qin and Karabacak 2010). However, these studies tend to overemphasize the organizational structure in argumentation without discussing the role of the logic of ideas and the quality of evidence or data used in supporting the claim (Nussbaum and Kardash 2005; Stapleton &Wu, 2015). Stapleton & Wu (2015) claim that the effectiveness of drawing upon evidence or data to support a claim may also affect the persuasive power of argumentative writing and it's necessary to use both argumentative structure and the quality of reasoning as guidelines in writing argumentation. Therefore, the present study is aimed at exploring the structural elements and the quality of evidence used by Chinese EFL learners in argumentative writing.

II. LITERATURE REVIEW

A. Toulmin Model of Argumentative Writing

The Toulmin model (1958, 2003) of argumentative writing includes six elements: claim, data, warrant, backing, rebuttal and qualifier. The claim refers to the assertion or conclusion of the argument. Data are the evidence to ground or support the claim. Warrant connects claim and data through indicating how the data support the claim. Backing is used to strengthen the warrant. Qualifier sets the limitations on the strength of the claim, and rebuttals are arguments question the truth of the claim. As suggested in this model, an argumentative writing requires writers to put forward an explicit claim and qualify the evidence through warrant and backing to support the validity of their claim, and during this process, the readers' rebuttals should be considered. The logic of argument is shown in the Figure 1 (Toulmin, 1958).
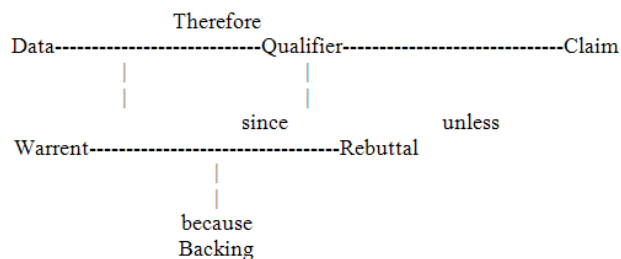

Figure 1. Toulmin model of argument

This model of argument structure has been widely applied in studies of exploring learners' argumentative writing. A number of studies have focused on the relationship between the application of Toulmin elements and the overall quality of argumentative writing (e.g. Connor, 1990; Crammond, 1998; Qin and Karabacak 2010; Nussbaum and Kardash, 2005). The findings of these studies suggest that the use of Toulmin components is an important indicator to show the quality of argumentative writing. Low ranked argument papers are insufficient in using certain Toulmin elements, such as data, warrants, whereas the high ranked argument papers present relatively more Toulmin elements, especially the use of counterarguments and rebuttals. Some studies suggest that the frequencies of use of certain Toulmin components increase with levels of learners' expertise (e.g. Crammond, 1998; Mc Cann, 1989). The results that higher graders significantly outperform lower graders in their argumentation indicate that the development of learners' argument abilities is based on their proficiency levels. Another direction of research from the perspective of Toulmin model is using it as a heuristic instruction tool to teach argumentative writing (e.g. Bacha 2010; Butler and Britt 2011; Lunsford 2002; Varghese and Abraham 1998; Wingate 2012). The results in the studies show that students gain significantly higher scores in their production of argumentative writings with the explicit instruction guided by Toulmin model. Most studies exploring argumentative writing with Toulmin model have been conducted within L1 context, while few studies analyze this topic in L2 context, especially the argumentative writing of EFL learners. As Hirvela (2017) claims, the research in L2 argumentative writing is not a fully developed research area.

In addition to addressing organizational structure of argumentation, another aspect needs further discussion is the quality of content or the logic of reasoning through writers' use of evidence in writing.

B. Evidence-based Argumentative Writing

Structure-based argumentation helps learners develop their ideas in a clear organization, but this should include analyzing the relevance of all the elements, whether the claim is supported soundly by the evidence, to ensure the overall quality of argumentative writing (Sampson & Clark, 2008; Stapleton &Wu, 2015). For example, learners' sophisticated adoption of Toulmin model in organizing structure does not necessarily guarantee their quality of reasoning in argument (Clark and Sampson, 2007). Acknowledging the importance of using evidence to support one's claim in an acceptable, relevant and adequate way is an essential part in judging argumentation (Sampson & Clark, 2008; Schwarz, et all, 2003). Without well-developed evidence, the argumentative writing is circular of various repetitions of the claim without specific purposes (Balwanz-Emmel,1989). Zohar & Nemet (2002) point out that good arguments should consist of "true, reliable, and multiple justifications" (p. 40). In other words, it is the soundness and validity of evidence that account for the logic of argumentation. However, studies examining L2 learners' actual use of evidence in writing argumentation are few.

Exploring the role of different types of data to support claims, Packer&Timpane (1997) classify seven categories of evidence: expert opinions, statistics, examples, personal experiences, common sense, logical analysis, and analogy. They can be further divided into two larger groups: factual evidence and non-factual evidence. For supporting a claim, the factual evidence, as hard evidence, is more persuasive than the non-factual evidence, the soft evidence. Hoeken and Hustinx (2003) put forward four types of evidence in argumentation: individual examples, statistics, causal explanations, and expert opinions. In terms of persuasive power, anecdotal evidence is viewed as less effective than expert, causal, and statistical evidence. Obviously, there is some overlapping between the two categories of classifying the evidence. For instance, in terms of the persuasiveness of argument, writers' own personal judgments and experiences are not regarded as strong evidence to support a claim. Based on these, the six different types of evidence investigated for further analysis in the present study are expert, anecdote, common sense, statistics, logical analysis, and analogy.

C. Interpretations of the Use of Evidence from Rhetoric Perspective

L2 learners' use of evidence in argumentation reflects their understandings about how to support their claims and make them persuasive. Thus, argumentation in nature is rhetoric (Sandoval & Millwood, 2005). Rhetorical analysis functions as a useful tool to justify the differences on the surface structure in argumentative writing (Liu & Du, 2018). For L2 learners, the differences between L1 and L2 linguistic and cultural conventions greatly influence their L2 writing. Some studies have been conducted to examine the differences between English and Chinese argumentative writing(e.g. Liao & Chen, 2009; Zhang, 2011). Researchers tend to interpret the rhetorical differences from the fundamental philosophy of the two cultures, that is, the differences between individualism and collectivism (e.g. Triandis, 1995). For example, Chinese cultures value collectivism, and self is defined by relations with others, while western cultures put more emphasis on individualism and self-achievement. In argumentative writing, learners' cognitive and epistemic patterns are reflected on their employment of rhetorical devices to present evidence in grounding claims (Kitcher, 1991). Therefore, better understandings of learners' use of evidence in argumentation may be achieved from the perspective of rhetorical analysis.

In a summary, the analysis of structural elements without considering the strength of evidence used is not enough to assess the overall quality of argumentation. As Sampson & Clark (2008) claim, there is a need to explore both the structural elements and quality features, such as relevance, sufficiency, and accuracy of the use of evidence in argumentation. However, the review of previous studies suggests an insufficiency in integrating both of the two aspects into the research of L2 argumentative writing. Thus, the present study is conducted to explore the features of structural elements and use of evidence in argumentative writing by Chinese EFL learners. The following research questions are developed for the study:

1. What are the structural elements adopted by Chinese EFL learners in argumentative writing?
2. What is the relationship between the use of structural elements and the overall quality of argumentative papers?
3. What are features of evidence used by Chinese EFL learners in argumentative papers?
4. What are the differences between proficient and less proficient learners in the use of evidence?

III. METHODS

A. Participants

The participants in the present study were 39 second-year English major students (ages 19 to 21) with 31 female students and 8 male students in a polytechnic university in China. They were native speakers of Chinese and came form two intact writing classes that were taught by the same teacher. At the time of the study, the participants had learned about how to write narrative, exposition, and argumentative writing. The focus of the writing class in this semester was to help students make preparations for the writing test in English Test for English Majors Band 4, in which students were asked to write an argumentative essay of 200 words within 45 minutes.

B. Instrument

In order to answer the research questions, three major instruments were employed in the present study: writing task, frame of structural elements in argumentation, rubrics of evidence use.

The argumentative papers used for the analysis in the present study were from the writing task conducted during the regular class time. The topic is "Should animals be used for scientific experimentation". The reason for choosing this topic was that participants were expected to have enough exposure to the background information of the topic in their daily experiences. Participants were required to complete the argumentative writing of no less than 200 words within 50 minutes. Clear directions on how to do the task were given by the teacher and the relevant information about pros and cons held by people were provided in the form of reading materials to participants to accomplish the writing task. Before taking the experiment, no participant had received any writing instruction about Toulmin model of argumentation.

To explore the structural elements used by participants in their argumentative writings, a modified Toulmin model of argumentation based on Qin & Karbacak's (2010) frame was adopted for further analysis. This frame emphasizes five elements in argumentation: claim, data, counterargument claim, counterargument data and rebuttal. A five-scale marking system was used to measure participants' average use of the five structural elements.

In addition to assessing structural elements of participants' argumentative writing, another importance factor affecting the quality of argumentation is the use of evidence. The rubrics of evidence used by participants to support their claims in the writing task was based on Packer & Timpane's (1997) and Hoeken & Hustinx's (2003) categories of evidence in argumentation. Six different types of evidence were included: expert, anecdote, common sense, statistics, logical analysis, and analogy. The overall inter-rater reliability of the rubrics was .86, which indicated the rubrics was reliable to identify participants' use of evidence in the writing task.

C. Procedure

Before the writing task, participants received an introduction to the present study from the teacher, who informed them of the purpose of the study was to examine university English-major students' argumentative writing. Then the teacher explained the directions of the writing task to the participants. Two opinion pieces in English with opposing

views on the controversial topic were presented to the participants, and participants were allotted 50 minutes to accomplish this argumentative writing during the class time. After they have finished, all the 39 papers were collected by the teacher. Finally, two papers which were unfinished were eliminated from this study, and altogether 37 argumentative writings were collected for further analysis.

D. Data Collection and Analysis

This study mainly focused on the five elements in argumentative writing: claim, data, counterargument claim, counterargument data and rebuttal. According to Stapleton (2001), the structural elements could be identified on the basis of semantic and linguistic features. For example, claims are usually put forward through using two syntactic structures: (1) by declarative sentences marked by "I think", "I believe" and "In my opinion"; and (2) by assertive structures, such as "on the whole,...", and "as opposed to widely held belief,...". Data are presented through prepositional phrases, such as "for that reason"and "for one thing", and subordinators "because". Counterargument and rebuttal are used through certain phrases or indicators, such as "although", "despite", "It is said that,...but...", "some people claim that,...however...". In addition to making decisions based on these obvious semantic and linguistic features, implied meanings expressed in the context were also coded.

Participants' argumentative papers were graded from four aspects according to the standard of Band 4 examination, including content relevance, content sufficiency, overall organization and language quality. The total score was 20 points. All the 37 argumentative writings were marked by two experienced teachers independently. The inter-rater reliability coefficiency of the scores given by the two teachers was 0.90, ensuring the overall grading standard.

According to different categories of evidence used to support claims in argumentative writing, all the 37 papers were encoded by two experienced teachers separately. They first identified the evidence used by participants and then classified the type of each evidence into the six categories respectively. For different opinions of the judgement, the two teachers discussed together and finally reached a consensus on the encoding method. After the process of encoding was completed, the descriptive date about the type of evidence and the overall number of evidence used in argumentative writing were analyzed.

IV. RESULTS

A. The Employment of Structural Elements in Argumentative Writing

To explore the overall use of structural elements based on the adapted Toulmin model by Chinese English-majors in argumentative writing, descriptive analysis was conducted. The results are shown in Table 1.

TABLE 1.
THE USE OF STRUCTURAL ELEMENTS IN ARGUMENTATION

Argumentative elements	Total N	Mean	SD
Claim	37	2.81	.79
Data	37	3.09	1.13
Counterargument claim	37	.87	.54
Counterargument data	37	.33	.43
Rebuttal	37	.37	.72

As indicated, all the five elements were employed in argumentative writings. On average, the most frequently used structural elements by Chinese English-majors are data and claim. The mean scores of the use of data and claim were 3.09 and 2.81 respectively. It showed that at least two claims and three pieces of data were used per paper. However, the mean scores of the use of counterargument claims, counterargument data and rebuttal were .87, .33, .37 respectively. Among all the elements, the mean score of the use of counterargument data (mean= .33) is the lowest. Further examined, only 6 out of 37 papers used counterargument data. This suggested that compared with data and claim, counterargument and rebuttal elements are less frequently used and few data from the opposing side were employed in argument.

B. The Overall Quality of Argumentative Writings

To find out the overall quality of argumentative writings, all the 37 papers were analyzed and graded. The total score of the writing task was 20 points. The mean score was 14.2 and the standard deviation was 3.17. The highest score was 18.5 points and lowest was 9.5 points. The results were shown in Table 2. It indicated that participants' overall performance on argumentation was poor and there was a relatively big difference in their argumentative writing performance.

TABLE 2.
THE OVERALL QUALITY OF ARGUMENTATIVE WRITING

	N	Mean	SD	Min.	Max.
Overall quality of papers	37	14.2	3.17	9.5	18.5

To further identify the relationship between structural elements used by the participants and the overall quality of their argumentative writings, the correlation analysis was conducted (See Table 3).

TABLE 3.
CORRELATIONS BETWEEN THE USE OF STRUCTURAL ELEMENTS AND OVERALL QUALITY OF ARGUMENTATIVE WRITING

	N	Claim	Data	Counter. claim	Counter. data	Rebuttal
The score of argumentative writing	37	.650	.592	.075	.034*	.040*

*p< .05

As shown in Table 3, participants' overall quality of argumentative writing was positively correlated with the use of counterargument data (p= .034< .05) and rebuttal (p= .040< .05), but the correlation between it and the use of other structural elements, such as claim, data and counterargument claim was weak. This indicated that in the present study counterargument data and rebuttal were the most important factors affecting participants' quality of argumentation.

C. The Use of Evidence in Argumentative Writing

Another research question in the present study is about characteristics of the use of support or evidence for claims in argumentative writing. Descriptive analysis was conducted to investigate the average types of evidence and the overall number of evidence used by participants. The findings were presented in Table 4.

TABLE 4.
THE USE OF EVIDENCE IN ARGUMENTATIVE WRITING

	N	Mean	SD	Min.	Max
The types of evidence use	37	1.99	.23	1	3
The number of evidence use	37	3.42	1.42	2	4

As shown in the results, the mean score of the types of evidence used by the participants to support their claims was 1.99 and the standard deviation was 0.23. The mean score of the overall number of evidence use was 3.42 and the standard deviation was 1.42. This indicated that participants employed nearly two different types of data as evidence and there was not big difference among learners. On average, at least three pieces of evidence were used for completing one argumentative paper.

In order to explore more about different categories of evidence used by participants in writing argumentation, frequencies of the use of six types of evidence were analyzed. The results were shown in Table 5.

TABLE 5.
THE FREQUENCY OF USING EVIDENCE IN ARGUMENTATIVE WRITING

	Categories of evidence					
	Expert	Anecdote	Statistics	Logical analysis	Common sense	Analogy
use frequency	5%	23%	0%	58%	11%	3%

According to frequency analysis in Table 4.4, the most frequently used evidence was the logical analysis(58%), which was followed by the evidence of anecdote (23%) and common sense (11%). The frequency of the use of expert opinions was 5%, and the analogy was used 3%. Among all the six categories of evidence, statistics was not found used (0%) by the participants in the present study. This finding indicated that logical analysis was used the most frequently by Chinese English-majors in argumentation.

To identify the differences in drawing upon evidence to support claims between participants, the employment of evidence by proficient and less proficient learners was compared. According to the scores of participants' argumentative papers, they were classified into three groups: proficient, average, less proficient. Participants with scores higher than 17 points were classified into the proficient group. Participants with scores lower than 11 points were classified into the less proficient group. The rest were classified as the average group. Thus, all the 37 participants were divided into three groups: 7 participants in proficient group, 20 participants in average group, and 10 participants in less proficient group. A further analysis was conducted through one-way ANOVA to exam whether the differences between proficient and less proficient group had statistical significance. The result was presented in Table 6.

TABLE 6
ONE-WAY ANOVA ANALYSIS OF SCORES AMONG PROFICIENT AND LESS PROFICIENT GROUP

	Mean Difference	Std. Error	Sig.
Proficient Less proficient	6.69	1.08	.002*

*The mean difference is significant at the .05 level.

As shown in Table 6, the mean difference (.002< .05) between the two groups in scores of argumentative writing arrived at a significant level. Thus, they could be used to represent the proficient and less proficient group respectively. To identify the differences in evidence use between the two groups, a comparison between the two groups' use of evidence was conducted. The result was shown in Table 7.

TABLE 7.
MEAN SCORES OF EVIDENCE USE BETWEEN PROFICIENT AND LESS PROFICIENT GROUP

	Types	Numbers	Categories of evidence					
			Expert	Anecdote	Statistics	Logical analysis	Common sense	Analogy
Profi.	2.01	3.40	0.61	1.51	0	2.46	0.51	0.44
Less Profi.	1.97	3.12	0	1.02	0	2.71	0.56	0

The data in Table 7 showed that the mean scores of the types (m=2.01) and the overall number of evidence used (m=3.40) by proficient groups are higher than those of less proficient group (m=1.97; m=3.12), indicating that proficient learners may be more skillful in using evidence to support claims in argumentation. However, the average types of evidence used by proficient group was only 2.01, indicating that even for proficient learners in the study, their actual use of evidence was insufficient. In terms of specific categories of evidence, the mean scores of logical analysis for both of the two groups were the highest among other categories, and the less proficient group seemed to use more logical analysis (m=2.71) than the proficient group (m=2.46), indicating that logical analysis was the most popular type of data used as evidence and less proficient learners mainly draw upon logical analysis to support their claims in argumentation. Followed by logical analysis, the second most popular type of evidence was anecdote. The mean scores of the proficient group and less proficient group were 1.51 and 1.02 respectively. Besides, there was another overlap in using common sense as evidence between the two groups.

V. DISCUSSION

In the present study, it was found that the basic elements adopted by Chinese EFL learners in their argumentative writing were claim and data, and not every argumentation included counterargument claims, counterargument data, and rebuttal. This finding is in consistent with findings in previous studies (Lunsford 2002; Qin & Karabacak, 2010; Varghese & Abraham, 1998). The overall quality of argumentative writing was found to be significantly correlated with the use of counterargument data and rebuttal. According to Toulmin (2003), counterarguments are key elements in argumentation. This may suggest that the integration of counterargument and rebuttal elements into an argumentative writing helps to make powerful and persuasive arguments. One possible explanation for the finding is that compared with the basic elements in argumentative writing, the development of complex structural elements, such as counterarguments, may need a higher level of linguistic proficiency, and the proficiency levels of participants in the present study are not advanced enough for them to develop a sound structure. As put forward in previous studies, the secondary Toulmin elements are more likely to be used by expert writers and advanced learners, thus the inclusion of counterarguments in argumentative writing develops much later (Crammond, 1998; Mc Cann, 1989). Another possible reason for not including counterarguments and rebuttal in papers is that the participants have never received any explicit instructions about Toulmin model. Thus, they may not realize the significant function exerted by counterarguments and rebuttals to produce quality argumentation, and they are not aware of the necessity of discussing and refuting the opposing side of opinions in an argumentative writing. Still another possible reason is coming from the difference between cultures. Based on the concept of individualistic culture, personal individuality is highly emphasized, so people are encouraged to express their different opinions with freedom. However, under the influence of collectivist Chinese culture, people value interpersonal harmony and are hesitant about questioning authority in social communication, so Chinese are more likely to represent a compliant style rather than conflicting with others, which is reflected on their argumentative writing.

In addition to the structural elements, another aspect in quality argumentative writing is the use of evidence. Without justification and support for claims, a claim makes no difference to a personal opinion (Stapleton, 2001). It was found in the study that on average, participants employed two different types of evidence and three pieces of evidence per paper, and the logical analysis was the most frequently used data as evidence while statistics was not found to be used by the participants. The findings show that the types and the overall number of evidence used by Chinese EFL learner are very insufficient which may limit the construction of persuasiveness in argumentation. Besides, that participants relied heavily on the use of logical analysis and reasoning to support their claims in argumentation may be partly due to participants' lack of knowledge and skills in employing different categories of data as evidence to support their opinions. What's more, participants may also be greatly affected by their circular communication style and image thinking pattern in Chinese, thus they tend to persuade others by using more personal interpretations or explanations implicitly than giving facts directly in their writing. However, in western cultures, the persuasiveness of argument should lie in facts and truth.

Comparing the evidence used by proficient and less proficient learners, it was found that participants from both of the two groups employed logical analysis, anecdote and common sense as data, and less proficient learners tend to use more logical analysis and common sense to support their claims than proficient learners. However, the larger number of use of these data by less proficient writers does not contribute to the overall quality of their writings. This result is in line with previous study that the number of data used does not correlate with the quality of argumentation (Brem & Rips, 2000). One of the possible reasons is that the analysis and explanation given by less proficient learners are not effective or sound evidence in supporting their claims. Deeper insights into the evidence used by less proficient learners are gained through examining their writings. For example, a paper from the less proficient group:

On the one hand, animal experiments truly make a contribution to the improvement of science.[claim]. These results largely reduces the cost of scientific research[evidence]. And above all, these experiments lower mortality of human beings and make people live better[evidence].

In the above example, the student mainly uses logical analysis to support her claim. However, there are some problems with her use of evidence. First, the evidence used is quite opinion-dominant without further elaboration, such as why it reduces the cost and how to live better. Second, the relationship between the claim and the two pieces of

evidence is vague, thus, the persuasive power is lowered by the less relevant and unclear support. Although there are overlaps between proficient and less proficient group's use of evidence, the evidence used by less proficient writers are not well-developed and lack of relevance and sufficiency.

VI. CONCLUSION

To summarize, the study found that most Chinese English majors employed claim and data as the basic elements in constructing argumentative writing, but fewer adopted counterarguments and rebuttals. However, the employment of counterargument data and rebuttals was found to contribute significantly to the overall quality of argumentative writing. Another factor affecting the quality of argumentative writing is the use of evidence. In the present study, the types of evidence and the number of evidence used by participants were very limited. Among different categories of evidence, logical analysis was the most frequently used data to support claims. Less proficient writers' use of evidence was not effective or persuasive to produce valid argument.

The present study has several pedagogical implications for argumentative writing instruction in EFL contexts. First, explicit instruction of Toulmin model could be adopted to raise students' awareness of the use of counterargument and rebuttal to produce quality argumentative writing. Before actual writing stage, teachers may guide students to find out both approval and disapproval on a certain topic to back them up. Besides, students also need to cultivate their abilities to think through a topic critically from multiple cognitive perspectives. For example, students should get ample exposure to materials including different ideas related to the writing topic and be encouraged to argue against different ideas. Second, there is a clear need for more extensive practice and treatment of evidence use in argumentative writing. The soundness of argumentation also depends on the logic of reasoning, so students should be able to establish the relevance between claim and their use of evidence to make their view valid and persuasive. For example, teachers should guide students to distinguish facts from opinions and encourage students to ground their claim on factual-based evidence. Teachers may also help students consider readers' expectations and require them to search for sufficient resources. Third, it is suggested that the evaluation of the quality of argumentative writing should attach great importance to the relevance and sufficiency of the use of evidence. Teachers may encourage students to point out weaknesses of reasoning in peer review and let them give suggestions to enhance the validity of argument.

Limitations with the present study are coming from the small sample. All participants are from two convenient classes and only one argumentative writing of every participant is analyzed. Another limitation with the study is that the writing task is completed within 50 minutes during the regular class time. The time limitation may have certain effects on participants' writing content. Further studies may explore EFL learners' perceptions of effectiveness of using different categories of evidence in argumentative writing.

ACKNOWLEDGMENTS

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