Rhetorical Moves in English Abstracts of Chinese Master's Students: Analysis of Pre- and Post-test Performance in an Academic Writing Course

Xia Jiang[1, a], Qing Wang[2, b]

[1]School of Foreign Languages, Southwest Minzu University, Chengdu 610041, China

[2]School of Foreign Languages, Southwest Minzu University, Chengdu 610041, China

Abstract: While more Chinese master's students are encouraged to write research articles in English, the teaching of English abstracts writing becomes popular in Chinese universities. This paper aims to explore the English abstract writing capabilities of the Chinese non-English major master's students in terms of rhetorical moves and the effectiveness of abstracts writing course. The pre- and the post- test of the same task were conducted in a university in China involving 334 students. Their abstracts were tagged and analyzed in terms of moves occurrence based on Santos' five moves model. By the comparison between the pre- and post-test moves, the research demonstrates that the occurrence of most moves increased after the writing courses, particularly the methods and results moves with remarkable increase. But a proportion of post-test abstracts still don't include the three indispensable moves: purpose, methods, and results. The result indicates that the academic writing course helped students better write the rhetorical moves in an abstract, but the purpose and conclusion moves, which presents as difficulties, should be given special training.

1. Introduction

An abstract, which summaries the major aspects of an article and "helps readers decide whether they want to read the rest" [1], is an essential part of a research article and follows certain rules. In the recent years, master's students in China are encouraged to write research articles in English for publication on international journals, so they should firstly learn to write abstracts correctly. English abstract writing, an important part in Academic Writing course for non-English major master's students, aims to train students to write research article abstracts in an internationally conventional way in terms of both rhetorical moves and language realization. Although different studies have been conducted to reveal the moves and language features of the abstracts from different disciplines, nations and article types [2-5], few studies pay attention to the abstract writing course.

The purpose of this research is to discover the English abstract writing capabilities of the Chinese non-English major master's students before and after their taking the course and to give implications for abstract writing courses in China. For this purpose, the research group in Southwest Minzu University of China designed and implemented the pre- and the post-test of the abstract writing task. Through the comparative analysis of the data of the five moves in the pre-test and the post-test, the research finds that the moves in the post-test is relatively more complete, but there are still unconventional move forms, especially the confusion between the result and the conclusion.

2. Methods

The research design, subjects, theories involved, data collection and analysis methods are as follows.

2.1 Subjects and Data Collection

The pre- and post-test were conducted before and after the academic writing course, which lasts for 4 months. The tasks are the same: the students are required to write an abstract after they read the same research article. 334 non-English major master's students of Southwest Minzu University have participated in this research, and 668 abstracts were collected. Then all the abstracts were

entered into the computer as separate texts. After data cleaning and numbering, all the texts were tagged with rhetorical moves manually.

2.2 Tagging and Data Analysis Methods

According to Santos' five-move generic structure model of abstract analysis, abstracts "follow a five-move pattern, namely: Move 1 motivates the reader to examine the research by setting the general field or topic and stating the shortcomings of previous study; Move 2 introduces the research by either making a descriptive statement of the article's main focus or by presenting its purpose; Move3 describes the study design; Move 4 states the major findings and Move 5 advances the significance of the research by either drawing conclusions or offering recommendations"[6].

Table 1 Five-Move Generic Structure Model by Santos [6].

Move	typical labels	Implied questions
Move 1	Background/ introduction/	What do we know about the topic?
Move 2	Present research/ purpose	What is this study about?
Move 3	Methods/ materials/ subjects/ procedures	How was it done?
Move 4	Results/ findings	What was discovered?
Move 5	Discussion/ conclusion	What do the findings mean?

In the research, the selected article was originally a complete English paper which has been published. In order to test the students' ability to write abstracts, the original abstract of the published paper was removed. In the process of move division, the researchers divide the original abstract into five moves according to the five move generic structure model of abstract analysis put forward by Santos. The result finds that the moves of the original abstract are not only very complete and concise, but also very clearly divided, enabling the readers easily identify each move clearly. Through reading the original abstract, the readers can have a clear understanding of the entire article.

After tagging the original abstract, the moves of the abstracts written by the students in the pre- and post-test were carefully identified and tagged with reference to the move division of the original abstract. Thus, a tagged corpus of abstracts was built. It comprises 668 documents. Then the corpus was processed with the corpus analysis software Antconc [7]. AntConc is a freeware, a multiplatform tool for carrying out corpus linguistics research and data-driven learning. It contains seven tools, and the present research used mainly the concordance tool, which shows search results in a "keyword in context" format. The Antconc can only recognize this format of txt files, so all selected research paper abstracts were converted into txt files. In order to count the frequency of different moves, the texts were consolidated into two files: pre-test file and post-test file. With AntConc, the calculation of the number of each moves was easy.

In the process of move identification, the researchers found some obvious problems in the abstracts written by the students. One is that the moves are not complete. The other is the unconventional move forms, especially move combination or overlapping between results and conclusion. So the researchers used Antconc for verifying this assumption. The concordance tool and the collocation function in Antconc was used to search for the examples of results move and conclusion move.

3. Results and Discussion

After the establishment of corpus and the division of each abstract move, the researchers got the occurrence frequency of five moves before and after the test easily by calculating the number of effective moves. The occurrence frequency of each move and the difference between the pre- and post- test is presented in Table 2.

Table 2 The occurrence frequency of each move of pre- and post-test abstracts.

Moves	Occurrence		Difference between the pre- and post- tests	Change compared with the pre-test
	Pre-test	post-test		
Introduction	243	275	32	9.3%
Purpose	231	244	13	3.7%
Methods	256	311	55	16.2%
Results	243	283	40	11.7%
Conclusion	225	184	-41	-12.4%

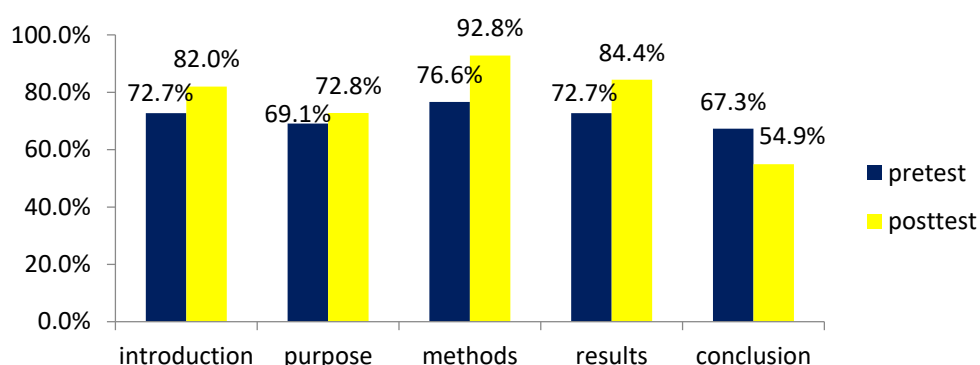The proportion of move occurrence to the total number of abstracts is illustrated as Fig 1.

Figure 1 The occurrence differences of each move of pre- and post-test abstracts.

Fig 1 shows that in both pre- and post-test, students covered most of the moves but not every move. Of the five moves, the three moves of purpose, methods, and results are most important and could not be omitted. However, from the data, we can infer that students did not fully realized their importance. This is particularly obvious from the pre-test data, where the five moves are almost equal in number. In the post-test, the situation is better, where the three indispensable moves increased by varying degrees, especially the method and results moves. As is seen in Table 2, after training, the methods move occurrence increased by 16.2%, while the results move by 11.7%. But the three moves still miss in some post-test abstracts. The post-test abstracts that include the Purpose, Methods, and Conclusion moves constitute 72.8%, 92.8%, and 84.4% of the total pool respectively, which means that at most 72.8% of abstracts compose all the three essential elements, although this is better than the figure in the pre-test, at 69.1%. In other words, more than one quarter of students didn't grasp the five move requirements of abstract writing.

According to the distribution frequency of the histogram in Fig. 1, the number and frequency of moves in post-test are generally higher than those in pre-test. Compared with the pre-test abstracts, the abstracts in post-test are relatively more complete despite some missing moves. Most of the moves increased in occurrence, which shows that after teaching, students' ability of abstract writing has improved in terms of moves presentation. Especially the methods, results, and introduction moves, which see rises of 16.2%, 11.7% and 9.3% respectively. So the teaching of academic writing course is successful in this sense. However, two phenomena are worth noticing.

One is that in both pre- and post-test, the introduction move has slightly more occurrence than purpose move, and the former sees higher increase than the latter after the course. The occurrence of the introduction move is 72.7% in pre-test and 82% in post-test, while the purpose move 69.1% and 72.8%. After the course, the students performed better in extracting both moves, with an increase of 13.17% compared with pre-test performance in the introduction move and an increase of 5.6% in the purpose move. While the purpose move is more important for an abstract, as has been emphasized in the writing course, students' failure to produce the purpose move can suggest that purpose move writing is difficult to learn.

Another important phenomenon easy to be seen is that the conclusion move does not show upward trend after the course. Rather than improvement like other four moves in the post-test, the conclusion move decreased by 18.2%. This needs to be investigated. When annotating the moves, the researchers found that many students tended to put the research results and conclusions together, which shows that these students did not understand the two moves clearly enough. In both the pre- and the post-test, many of the results and conclusion moves appear in an incorrect way. For example, in a sentence in a pre-test abstract, "In the end, it can be concluded that print and online media equally affected purchase behavior and memory. " the word "conclude" is used to present the results "print and online media equally affected purchase behavior and memory", which would be tagged as a result move, but the real conclusion missed. And the data displays that the post-test has not improved this situation, which indicates that distinguishing the two moves of results and conclusion is a difficulty in writing an abstract.

From the result, we may infer that the acquisition of the methods move and the results move is more effective, while the purpose and conclusion moves writing is more difficult to learn.

4. Conclusion

An abstract is a brief summary and miniature of the research article. As an important entry point, an abstract is often used to help readers quickly catch up with the purpose and content of the paper. However, it is not easy to write an effective and complete abstract, which should be concise and contain necessary information, which is usually no more than 200 words. In this paper, based on Santos' five-step framework theory, 668 English pre- and post-test abstracts were collected and analyzed in terms of the rhetorical moves occurrence.

4.1 Major Findings

Through comparative analysis, it is found that students did not fully extract the important information of a research article before the academic writing course, and the lack of conventional moves is quite frequent. But after the course, most students' abstracts can include three or four moves, and a few students can even cover all the five moves, which reflects that the teaching has some effects, that is, students extract more complete information into the abstract after taking the course. Moreover, the research finds that the purpose move is difficult for the students to write, and the results and conclusion moves are easy to be confused, which means that the students cannot distinguish the results from the conclusion moves very well.

4.2 Implications for Abstract Writing Courses

The research provides some implications for English abstract writing course in Chinese universities. Chinese non-English major master's students are generally unaware of the essential elements of an academic abstract even after having written theses for a bachelor's degree. They need to be trained on the writing of a five-move abstract. But the learning is not easy as imagined, Some students could not efficiently extract the three most important moves, namely, purpose, methods, and results. And they have most difficulty in exacting purpose and distinguishing results from conclusion. It is suggested that the future course pay more attention to the practice of extracting five moves from a research article, especial the purpose move. What's more, the training on separating results from conclusion and the usage of the word "conclude" should also be stressed in class.

4.3 Limitations of the Research

The research also has limitations. Firstly, due to the source accessibility, the research only analyzed the students in one university, which represents the similar language and academic level in China, because graduate students are admitted to different universities mostly based on their entrance examination score, including national English examination score. While Southwest Minzu University of China is a university located in the less developed area and ranks upper middle among the nation's over 800 universities that are qualified to grant master's degree, the master's students in Southwest Minzu University are not top students in English and have received limited academic

training before studying for master's degrees. So the research results can only apply to general situation of Chinese universities, not to top universities. Secondly, the research did not compare the performance of the students of different levels and didn't investigate the length and sub-moves of each move which may suggest more detailed findings.

4.4 Suggestions for the Future Research

It is suggested that the future study collect the abstract samples from different universities and divide students into different English language proficiency groups and different disciplines groups to further explore the differences. Concerning the move analysis, further researches could be done such as dissecting the length, sub-moves, language realization of each move, and the reasons for the move learning failure are expected to further probed into as well.

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