Metacognitive Monitoring in English Writing

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Abstract: As for the role of metacognitive strategies in English acquisition, domestic and foreign studies mainly focus on the role of metacognitive strategies in the training of listening, speaking, reading, translation and other skills. There is still limited research on the relationship between metacognitive strategies and writing, and there is still much room for the study of the correlation between English writing instruction and metacognitive monitoring working as the core of metacognitive strategies. By applying the theory of metacognitive monitoring to the teaching of English writing, this paper observes the influence of metacognitive monitoring on English writing instruction and seeks the feasible methods to cultivate students' metacognitive monitoring ability. This paper holds that students' metacognitive monitoring ability is directly proportional to their English writing proficiency, especially at the linguistic level of English writing. The main metacognitive monitoring method adopted by students is self-examination.

1. Introduction

In the 1970s, Flavell put forward the concept of metacognition. He uses "metacognition" to refer to the individual's ability to effectively monitor and control the process of knowledge intake, storage, search and memory reproduction in the cognitive process [1]. From the perspective of psychological components, metacognition includes three components: metacognitive knowledge, metacognitive experience and metacognitive monitoring [2]. Among them, metacognitive monitoring is the core psychological component of metacognitive strategies [3]. Many educational researchers at home and abroad have studied the role of metacognitive strategies in English acquisition. These studies mainly focus on the relationship between metacognition and acquisition of listening, speaking, reading and translation skills in English acquisition, such as exploring the relationship between metacognitive strategies and the improvement of listening ability [4], the application of metacognitive strategies in college students' English vocabulary learning [5], the regulation and monitoring of metacognitive strategies in English reading [6], and the correlation between metacognitive monitoring and Translation ability [7, 8, 9]. Kasper, L. and Zhang Yuping have done enlightening research on the relationship between metacognitive strategies and writing. The former sets up questionnaires to assess the growth of metacognitive knowledge in ESL students' writing; the latter points out that the application of metacognitive knowledge in writing can effectively improve students' writing level [10, 11]. There is still much room to study the relationship between metacognitive strategies and writing. At present, domestic research mainly focuses on the overview of metacognitive writing and the factors influencing the composition and influence of metacognitive writing. Some researchers believe that "rare are the application of metacognitive knowledge and strategies in writing instruction and empirical research." [12]Regretfully, they have only studied the role of metacognitive knowledge in English writing instruction from the perspective of metacognitive integrity. There are few empirical studies on the correlation between English writing instruction and metacognitive monitoring, which is the core of metacognition.

The improvement of students' writing ability and the achievement in writing course depends on the students' autonomous consciousness and active role. In order to give full play to students'

initiative in the process of writing, it is of great importance to cultivate and strengthen students' metacognitive monitoring ability. This paper applies the theory of metacognitive monitoring to English writing instruction in order to observe the influence of metacognitive monitoring on English writing instruction and seek a feasible way to cultivate students' metacognitive monitoring ability.

2. Concept Definition

In a broad sense, metacognitive monitoring is metacognition, which is the monitoring and control of cognitive process. In a narrow sense, metacognition includes metacognitive knowledge, metacognitive experience and metacognitive monitoring. Metacognitive monitoring is the core aspect. Metacognitive knowledge refers to the cognitive subject's knowledge about all the characteristics of himself or other participants in cognitive activities, including subject knowledge (such as the understanding of his own writing level, the understanding of the differences between his writing level and that of other learners), the awareness of tasks (such as the knowledge about the specific objectives of a writing task or the materials needed to complete the writing task), and knowledge of learning strategies and their use (e.g. how to write an article, how to structure one, etc.). Metacognitive experience refers to the emotional experience generated by the individual in cognitive activities. This experience usually occurs when the cognitive individual has a high level of thinking activities; for example, the writer realizes his mistake in examining the topic and re-examines it. Metacognitive monitoring refers to the monitoring and evaluation of cognitive goals, cognitive strategies, cognitive activities, etc. in the cognitive process. When recognizing the problems in the cognitive process, the individual adjusts the links in time and chooses the appropriate methods to complete the cognitive activities. Metacognitive knowledge, metacognitive experience and metacognitive monitoring are interrelated and different. Metacognitive knowledge is the basis of metacognitive experience and metacognitive monitoring; metacognitive experience can lead to the modification of metacognitive knowledge and the generation of metacognitive monitoring; finally, metacognitive monitoring can stimulate metacognitive experience, and then lead to the modification of metacognitive knowledge.

This paper explores how metacognitive monitoring in a narrow sense plays a role in language, structure and logic of English writing on the basis of improving metacognitive knowledge. In the teaching of English writing, to guide students to strengthen their metacognitive monitoring ability can enable them to plan, monitor, check, evaluate, control and adjust their writing process actively, consciously and effectively, which is embodied in making plans, operating controls, self-evaluation, checking results and taking remedial measures.

3. Empirical Research

3.1 Research Questions.

This paper studies the significance of metacognitive monitoring in improving students' writing ability and how to improve students' metacognitive monitoring ability. In order to make the research questions operable, the research focuses on the following two questions: 1. What is the role of metacognitive monitoring in improving students' English writing structure, language and logic? 2. what effective metacognitive monitoring means are commonly used by students?

3.2 Research Methods.

A combined method of the quantitative research and the qualitative research is adopted. The quantitative research includes a questionnaire and two writing practice results. The qualitative research is based on face-to-face semi-structured interviews with six students. The quantitative research aims to study the correlation between the experimental group's writing foundation and the effect of metacognitive monitoring; the qualitative research is mainly used to investigate the subjects' writing process and the reasons for their adjustment of writing strategies.

According to the two specific issues to be studied, this study carries out statistical analysis from

the following two aspects: 1) In order to compare the changes of the quality of students' writing practice before and after the metacognitive monitoring training, the experimental group and the control group carried out two writing practices: simulated writing before the test and a writing practice after the test. The author asks three teachers to score the students' simulated writing before grouping. They scored the structure, language proficiency and logicality of the article separately. As the composition part of CET-4 (Test for English Majors-Band 4) is fully scored 15 points, the author designs that the full scores of the above three aspects are all 15 points. The average score of the three teachers is the students' score in this respect. Then the changes of the scores of the two groups in the above three aspects before and after the experiment were analyzed and compared. 2) Three students from each group were randomly selected for face-to-face semi-structured interviews to analyze the metacognitive monitoring methods adopted by statistical students.

3.3 Research Objects.

The subjects of this experiment are 30 English sophomores from a university in Yunnan. Thirty students were divided into two groups: A and B. The grouping was based on the average scores those students got for all the subjects when they were freshmen, the first three writing tests and the metacognitive knowledge level survey. Firstly, the author divided 30 students into two groups according to the average scores of each subject in their first grade and the scores of three writing simulation tests. The ratio of good, medium and poor students in each group is basically the same, so as to ensure that there is no significant difference in the English writing foundation between group A and group B. Thereafter, the author conducted a questionnaire survey on students' metacognitive knowledge of writing, investigating students' knowledge level of their own writing ability, writing difficulties, writing level differences with others, writing goals, writing strategies and so on. There are 30 items in the questionnaire, and there are five grades after each item. 1 = completely consistent, 2 = basically consistent, 3 = general; 4 = not very consistent, 5 = completely inconsistent. Students choose from five grades according to the consistency of the item description content with their own reality. The score is 5 points according to the complete consistency, and the score of the five grades decreases by 1 point in turn. The higher the score of 30 items, the higher the students' metacognitive knowledge level. According to the actual score of the questionnaire survey, the higher the level of metacognitive knowledge, the higher the level of writing; the lower the level of metacognitive knowledge, the lower the level of writing. Therefore, there is no significant difference in the level of English writing and metacognitive knowledge between the two groups. Group A was the experimental group, while group B was the control group.

3.4 Experiment Process.

a) Pre-experiment Training: In order to provide preconditions for the experimental group students to carry out effective metacognitive monitoring independently and actively, three metacognitive monitoring training sessions were conducted for group A students before the experiment, each training time being 1 hour. The content of the first training was the introduction of the metacognitive theory. The purpose of this training was to enable students to have a better understanding of metacognition, to recognize the purpose of the experiment, and to attach importance to metacognitive monitoring. The second training was to illustrate effective metacognitive monitoring for students. The training was divided into two stages. In the first stage, the teacher gave a writing task: to write a 100-word paragraph on a given topic. Before writing, the teacher had given clear writing requirements, such as the integrity and unity of the paragraph, logical coherence, avoidance of language errors, as far as possible to achieve a variety of sentences, etc. In order to ensure that students receive clear instructions, the teacher took a paragraph with the same number of words, a clear and unified theme, a clear hierarchy, tight logic and fluent language as an example. This link was to ensure that the students in the experimental group have perfect metacognitive knowledge, which was the necessary guarantee for effective metacognitive monitoring. Stage 2 was students' real-time observation and the teacher's explanation of the process of metacognitive monitoring. The specific method was that the teacher simulates the students' writing process and exhibited them how the teacher's metacognitive monitoring affected the teacher's writing process by thinking aloud. By

observing the process of the teacher's simulated metacognitive monitoring, group A students clearly indicated that they already knew how to carry out metacognitive monitoring in writing. The third training was for students to practice metacognitive monitoring. The teacher assigned a writing task and students were supposed to finish it within half an hour. After that, three students were randomly selected and interviewed. From the interview, it's clear that the three students consciously carried out metacognitive monitoring in the process of writing. After three training sessions, the experimental group was expected to pay full attention to the role of metacognitive monitoring in the process of English writing and have developed some metacognitive monitoring strategies for English writing.

b) Experimental Task: In the experiment, two groups of students, A and B, spent 30 minutes in class writing a composition entitled "The Benefits of Being a Village Officer". According to the requirements of the syllabus for English majors, one for English sophomores to meet in writing is that they should be able to write a short essay of 150-200 words in 30 minutes according to a guided outline or chart, data, etc. The contents are well-organized, the structure is precise, the grammar is correct, the language is fluent, and the expression is proper. Therefore, the assignment of such a writing task was not only in line with the teaching practice of English majors, but also close to the life of students. In addition, the composition scores were to be recorded in the mid-term exam of this semester. This was to ensure that both groups of students completed their compositions conscientiously, so as to make the experimental results authentic. After class, the teacher talked with three students in groups A and B in a one-to-one way to understand the self-monitoring behavior of students in the process of writing and to record the conversation for analysis.

3.5 Research Results.

According to the above three aspects, the statistical results are shown in the following four tables.

Table I Quality Comparison Of Two Groups' Experimental Writing

	Structure	Language	Logic	Total Score
Group A	12.6	11.8	9.7	34.1
Group B	12.4	10.9	9.3	32.6

From Table I, we can see that there are differences between group A and group B. The average scores of group A in structure, language and logic are higher than those of group B. Among them, the average scores of group A are 0.2, 0.9 and 0.4, higher than those of group B, respectively. Therefore, the writing quality of group A with metacognitive monitoring training is higher than that of group B without metacognitive monitoring training. Metacognitive monitoring has the most obvious effect on Group A students' language.

Table II Comparison of writing quality before and after the experiment in Group A

Group A	Structure	Language	Logic	Total Score
Before	12.4	11.2	9.3	32.9
After	12.6	11.8	9.7	34.1

Table III Comparison of writing quality before and after experiment in Group B

Group B	Structure	Language	Logic	Total Score
Before	12.2	11.0	9.1	32.3
After	12.4	10.9	9.3	32.6

From Table II and III, it can be seen that after the experiment, the quality of students' compositions in Group A has been significantly improved, with an average increase of 1.2 points. The improvement in structure, language and logic is 0.2, 0.6 and 0.4 respectively. The most significant improvement is observed in language. It can be seen that students have carried out metacognitive monitoring, and the quality of compositions has been significantly improved, especially at the linguistic level. In contrast, the writing quality of group B students does not change much after the experiment. The total average score increases by 0.3. Among them, the structure and logic increase by 0.2, but the language decreases by 0.1. Such a change must be caused by the

natural fluctuation of scores caused by different writing tasks and different students' exertion.

Table IV Self-questioning in the process of writing feedback from two groups of students in the interview

	Structurally related	Language-related	Relevant to logic	Other	Total
Group A	41	49	37	8	135
Group B	33	39	28	9	109

The table above shows group A students have more self-questioning questions than group B students, which indicates that group A students have a strong awareness of metacognitive monitoring in the process of writing; group A students have the most self-questioning questions related to language, the most monitoring of language, and the second is monitoring at the logical level.

Table V Self-asked questions of the students of the experimental group

Type	Content	Features
Type1	Do my sentences have grammatical problems? Is the predicate form correct? Does the subject and predicate of a sentence agree? Is this the "Three Singles"? Do I use compound sentences? What is a compound sentence? Did I use complex sentences? Besides As a result, is it better for me to use Consequently here? Is this an adverbial clause or an attributive clause? Do I need to use another non-restrictive attributive clause? My sentences are too long. Should I add some short sentences? Is there too many verbs in this sentence? Can we use nominalization to deal with some words? Is the sentence pattern of three topic sentences parallelism? …	language
Type2	Do I have three layers to write? Did I clarify the center of my argument in the first paragraph? Do I summarize all the above at the end?	Structure
Type3	Does the third layer seem to overlap with the first? Can I go from micro to macro? Or the other way around? Do I need to find an example of how someone I know changed after becoming a village official? Can I make up an example? How many college students do they become village officials in Yunnan every year? What does this amount mean?	Logic
Other	What discourse did I use? Did I use examples? My example seems very unconvincing.	Discourse techniques

From Table V, it can be seen that in the process of monitoring, students mainly adopt the metacognitive monitoring method of self-examination. Self-reflection refers to a self-teaching method in which students, after mastering certain metacognitive knowledge, imitate their teacher and gradually ask themselves in the process of writing so as to complete the task of writing. Students use introspection method to ask questions in the process of writing, think and complete writing step by step. The more questions they ask, the stronger their awareness of metacognitive monitoring and the higher their writing level.

4. Summary

Through this experiment, we can draw the following conclusions: firstly, metacognitive monitoring is of great significance to English writing, the stronger students' awareness and ability of

metacognitive monitoring, the higher their English writing level; secondly, metacognitive monitoring has the most prominent significance on the language level of English writing; thirdly, the main metacognitive monitoring method adopted by students is self-examination, which requires effective teacher training and teaching. The teacher should give students examples to follow. It's acknowledged, some limitations do exist in the research. The number of samples in this study is small; the subjects are from the same university; in addition, the research cycle is short, only one month. Thus, the application of metacognitive monitoring in English writing instruction still needs further study and more research questions are to be answered. For example, why do students monitor language more than other levels? Besides self-examination, what are the effective metacognitive monitoring methods for English writing? Besides effective pre-writing training and demonstration, what role can the teacher play in helping students develop metacognitive monitoring more effectively? We will carry out further research on these issues.

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