A Study on the Teaching of Practical English Writing in Senior High School From the Perspective of Memetics

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Abstract

Nowadays, foreign researches on memes mainly focus on linguistics and pragmatics, while China has gradually begun to explore the relationship between memetics and teaching, but it has not yet attracted too much attention. Therefore, this study will explore the internal relationship between memetics and English writing teaching. The main content of memetics is memes, which refers to "something to be imitated" (Dawkins, 1976). Its main feature is imitation and replication. In foreign language teaching and learning, imitation and reproduction are inevitable. In other words, language learning is to learn from imitation and to accumulate materials in order to gradually reach the level of innovation.

The study was carried out in senior high school in Nanchang, Jiangxi Province. There are 106 students in it regraded as participants in this experiment sustaining four months. The research is designed to solve these two issues: (1) Can English practical writing based on memetics improve senior high school students' writing performance? If so, to what extent? (2) Have students' attitudes towards English writing changed before and after the memetics based on English practical writing experiment? What are the specific aspects?

On the basis of the collected data in this study, SPSS 22.0 will be applied to analyze the results of tests and questionnaires. In line with the results, some conclusions are reached as it follows: (1) By the analysis of the results of tests, English practical writing teaching with memetics can obviously improve students' writing proficiency. (2) According to the answers of interview and the results of questionnaires, the conclusion can be drawn that after the four-month experiment, students' attitudes changes a lot.

1. INTRODUCTION

Writing is one of the basic skills to learn English and is an essential way for students to gain English language knowledge, which can reflect learners' actual English level. The New Curriculum Standard Syllabus (experiment) regards improving the writing abilities of students as one of the most principal and primary tasks of English teaching. Meanwhile, it also emphasizes the ability of English thinking and expression, so English writing takes an essential part in English teaching and learning as well as it accounts for about 1/5 of the examination score. Thus, the cultivation of writing ability is an important goal in senior high school.

However, in terms of most students, they fails to reach the syllabus and it is too difficult to write a good English composition due to the investigation of their comprehensive ability. First of all, students own limited vocabulary. Wilkins (1972) said, "Without grammar very little can be conveyed. Without vocabulary nothing can be conveyed." They fail to express their emotions properly owing to their poor vocabulary. What's worse, they can not understand grammar accurately so that it is hard for them to write a fantastic passage or even a complex sentence correctly. At last, they are unaware of the structure of discourse. What they write are inconsistent with locality and coherence so that confuse readers.

The reason why students make mistakes in English writing is ascribe to the teacher's constant English

teaching. As for teachers, when teachers teaches how to write a composition, students lack of enough time to practice. In other words, the class is still not students-centered but teachers-oriented. Besides, traditional English writing teaching pays more attention to students' final writing marks so that it neglects the writing process and the significance of feedback which fails to cultivate students' writing ability independently as well as internal motivation for English writing. Finally, a lot of students are afraid to and even resist to learn English. In short, it is necessary and urgent to balance the drawbacks in English writing teaching. Then there presents memetics.

"All the similarities of the origin of social communication are the direct or indirect results of each form of imitation. The whole human history is a history of imitation, which is the basic principle of social development and existence as well as the root of social progress." He once declared, "Society is imitation" (Marsden, 2000). Practical English writing exists in the society, so it shows up the characteristics of imitation and is based on imitation. Blackmore (1999) wrote in The Meme Machine , "the ability of imitation distinguishes us from animals." English learners are no exception. Moreover, the etymology of meme derives from the Greek word 'mimeme', which denotes 'imitation' and means 'something to be imitated' (Dawkins, 1976). Memetics is a theoretical and empirical science so as to study the replication, spread and evolution of memes.

At home and abroad, there are many researches on memetics training in non-English major college students and other groups, and the training methods adopted have been initially systematic. However, there are few memetics studies especially in senior high school both at home and abroad. In high school, students have to learn at least six subjects in three years. Because their time is limited, most of students have not enough time or cannot find the right way to learn English. It is essential for teachers tell students about how to cultivate students' correct learning attitude, to change their cognition of traditional learning method imitation and recitation as well as improve their learning by studying memetics. Therefore, this research which attempts to investigate the relationship between memetics and English writing proficiency of senior high school students, as well as discusses the impact of learning attitude on the relationship between them.

2. LITERATURE REVIEW

2.1 Relevant Studies on Memetics Abroad
Up till now, the researches of memetics abroad involve its concept, connotation, characteristics, stages and significance, which describe the development of memetics from different perspectives in various fields, such as pragmatics, linguistics, philosophy and sociology. The development of memetics has experienced four climaxes.

Memetics is a new theory on the basis of Darwin's theory of the origin of species and evolutionism. Meme, the Greek term for meme, means "something to be imitated" (Dawkins, 1976) The concept first appeared in a book called *the Selfish Genes*, which was first published by Richard Dawkins, a professor at Oxford University, in 1976. In his view, "meme" is a unit of language. Through the imitation between people, brains, human thoughts and ideas are inherited. In other words, human beings are the hosts, in which memes exist and are controlled by them. With Dawkins' definition and introduction of meme, the development of meme theory has been introduced into the first climax, which makes people understand that biological theory can also be applied to social science and makes this new term more and more popular in the world.

In 1998, Heylighen raised a question in his article: "what makes a meme successful?" and pointed out that the life cycle of meme has four stages: assimilation, retention, expression and transmission. Assimilation means memes that can infect a new host and enter memory. Retention refers to the process of host selection or elimination of memes. Expression is that memes must come out of the memory of the host and enter the memory of other hosts. Communication refers to the spread of memes in distinguishing ways.

In 1999, with the publication of Susan Blackmore's *The Meme Machine*, she proposed another interesting study in the field of meme researches. In her book, she focused on the practical operation of meme theory, rather than just describing meme as a form of thinking. She explained the origin of religion, brain and language, altruism and other social phenomena in a new way, which are all on the basis of the hypotheses of meme. Her research was a milestone in the development of memetics, pushing it to the second climax. Since then, scholars have begun to explore the internal principles of memetics.

With the establishment of meme system, memetics reached the third climax. During this period, scholars have studied memes in different aspects. Gatherer (2001) tried to use memes to analyze and solve social problems (such as homosexuality). Sperber (2000, 2006), Levinson (2003, 2006) and Millikan (2004, 2005) conducted the studies of meme in various degrees.

The TED (Technology, Entertainment, Design) Seminar held on March 8th, 2008 brought another climax to the development of memetics abroad. At the meeting, Dan Dennett stated that meme, as a new entity in the brain, can compete, coexist, replicate and reproduce. In his view, memes are not only information storage packages with ideas, but also can be carried on physical entities.

2.2 Relevant Studies on Memetics at Home
Compared with the western researches on memetics, the relevant studies and practice in China has just started between the 20th century and the 21st century. Western

studies mainly focus on the internal mechanism and principle of memetics. Based on the theoretical framework of Western memetics, China has begun to explore the internal relationship between memetics, second language acquisition and English teaching.

Over the past few years, many domestic researchers began to focus on memetics, but compared with foreign countries, the researches on meme application in China is relatively late and slow. It was not until Gui Shichun wrote the preface of the second edition of language and culture for Gu Jiazu and Lu Sheng in 2002 that this theory attracted widespread attention to memes. In the preface, Gui Shichun first briefly introduced the term meme and pointed out that meme, brain and culture are closely related. He also suggested that people should pay attention to the studies of memetics. He was likely to be one of the pioneers of memetics in China. (Gui, 2002)

Later, He Ziran (2005) divided memes into two categories: genotype memes and phenotype memes and introduced the role of these two memes in language learning. Genotype meme refers to the meme with the same content and different form; while phenotype meme refers to the meme with different content and the same form.

In the same year, Gao Chunjuan (2005) believed that the process of foreign language learning can be regarded as the complete life of foreign language cultural memes reflected by language learners. This knowledge can help learners make full use of the target language through citation, transplantation, grafting, morpheme and expression.

Chen Linxia and He Ziran (2006) introduced the theories, the origins, characteristics and types of memes as well as analyzed the changes of language memes in the process of copying and spreading and the reasons for the success of language memes.

Chen Chenghui and Xiao Hui (2012) chose two classes with a total of 109 students from the first year of 2010 non-English major university in Nanjing. The purpose of this study was to explore the effect of listening and speaking training on writing. The experimental results showed that the new writing teaching mode of "combining listening, speaking and writing as one mode" can significantly improve college students' English writing level, enhance their writing interest, confidence and sense of achievement, and promote their comprehensive language skills.

3. METHODOLOGY

3.1 Research Questions

In the context of English as a foreign language teaching and learning in China, this study is designed to explore whether the change of learning attitude can improve the relationship between senior high school students' writing ability and their writing proficiency through the application of memetics. More exactly, the study is to solve the two questions:

(1) Can English practical writing based on memetics improve senior high school students' writing performance? If so, to what extent?

(2) Have students' attitudes towards English writing changed before and after the memetics based on English practical writing experiment? What are the specific aspects?

3.2 Participants

The participants in this study are students in grade one from one senior high school in Nanchang, Jiangxi province. 106 students, who come from two natural classes (52 from Class five and 54 from Class six), are chosen as participants for the experiment. These two classes are taught English writing by the author with the same teaching materials and the teaching duration is four months. The only difference is that the experimental class (Class 6) adopts memetics to guide English practical writing teaching, while the control class (Class 5) still adopts the traditional teaching method. All of them are purely native speakers of Mandarin Chinese mostly at the age of 14-16 years old who have also been EFL learners having an average of 7 years' English learning experience. In order to guarantee the effectiveness of the test, a pre-test will be done before the experiment. English proficiency of the subjects is measured by their results of pre-tes and the analyses of the statistics are calculated by SPSS22.0.

3.3 Instruments

3.3.1 Tests

The tests contain pre-test and post-test, whose maximum scores are 25. And students are required to finish writing within 30 minutes. The writing scoring standards of the two tests are in accordance with the college entrance examination writing scoring standards. From three aspects of vocabulary, grammar and structure, the two experienced English teachers who have participated in the college entrance examination writing scoring are graded and the average score is taken. If the difference between the two times scores are more than three points, the third teacher will give the final mark. Both of the two tests are to verify whether memetics writing teaching can improve students' writing proficiency.

Pre-test

Pre-test is of great significance in this experiment because it could help teachers know students' English writing level and lay a good foundation for the experiment. Pre-test was carried out in the first week of the experiment to investigate the difference between the two classes. Therefore, after the pre-test was completed, the author would get the average scores and p value of the two classes and contrast with the two classes

Post-test

Post-test was designed to test students' English writing proficiency again after using memetics in English practical writing teaching. All 106 students must participate it

again carefully to finish the test and experimental teachers would give them scores. When the scores came out, the writer can compare the post-test with the pre-test to find out the effect of using memetics.

3.3.2 Questionnaires

The two questionnaires used in this study are to test the students' attitudes towards the teaching of English writing based on memetics. The content of the two questionnaires is the same. The purpose of the two questionnaires is to investigate whether the students' attitudes towards writing have changed, if so, how much they've changed. The questionnaire writing comprehension scale is developed by Daly & Miller (1975) through rigorous item design, screening and testing. Therefore, the reliability and validity of the questionnaire can be guaranteed. Based on this research scales, the members of the research team consulted a large number of references at home and abroad and modified them to form the current questionnaire, which measured students' attitudes towards the teaching of English writing based on memetics.

The two questionnaires have one main part which are composed of three aspects including18 items. In the first aspect, there are five questions in 1-5 questions on writing self-confidence. There are six questions in 6-11 questions in the second part about writing motivation. In the last part, there are seven questions in 12-18 questions about writing anxiety.

These two questionnaires were scored with the 5-point Likert scale. This sentence is totally or almost completely unsuitable for learners' own situation (1 point); this sentence is usually not suitable for learners' (2 points); this sentence is sometimes suitable for learners' (3 points); this sentence is usually suitable for learners' (4 points); this sentence is completely or almost completely suitable for learners' (5 points). The author will require the relevant teachers in senior high school to assist in the implementation of the questionnaire survey and ask the investigators to choose the appropriate answers according to their own actual situation. After collecting the questionnaires, the author analyzes the data through SPSS22.0. In order to make students understand the content of the questionnaire accurately and complete it efficiently, the content of the questionnaire is presented in Chinese. After the two questionnaires gathered, the writer will testify their reliability and validity.

3.3.3 Interview

The author interviewed some students from senior high school about their memetics learning, English writing level and attitude towards English writing. The interviewees are randomly selected according to the list of the class, and then the students are gathered in a meeting room for collective interview. The content of the interview is based on the content of the questionnaire.

A. Before the interview, the listed outline of interview should be shown to the interviewees in order to make them clear of all the interview questions. On the other hand, the interviewees should be given some time to think about these questions so that in the interview process, the students will not feel embarrassed and nervous. Meanwhile, the conversation atmosphere is relaxed, and the researchers can get more real and effective information. During the interview, MP3 is used to record the interview content. After the interview, the interview results are sorted out. The interview time of each student is limited to 15-20 minutes. Specifically, the questions of the interview as follows:

a. Compared with the traditional writing teaching, do you prefer the new writing teaching mode of English teachers, which is based on memetics?

b. Have you changed your attitude towards English writing through this period of English writing teaching in accordance with memetics?

c. Before the experiment, many students thought that English writing was very difficult, so after learning new English writing teaching on memetics, do you think it will help your future writing? If so, in what ways?

3.4 Research Procedures

The research was carried out for four months. Two classes are chosen as experimental class and controlled class with the same English material. Besides, all students from the two classes take part in it. The procedures of this research consisted of five steps, which included pre-questionnaire, pre-test, classroom experiment, post-questionnaire and post-test. The most primary and principal step is to know the attitudes towards learning English practical writing. Therefore, the author handed out the pre-questionaire to the experimental class in the first week.

Then, the author made the pre-test before the experiment. All students from the two classes will join it. The material of the pre-test used National College Entrance Examination English Volume I, 2016. It mainly tested students' writing level through practical English writing.

Next, the author will apply memetics to English practical writing teaching in the experimental class, while the control class was taught by the traditional writing teaching. In the experimental class, the steps of the classroom experiment is based on the meme life cycle proposed by Heylighen (1998) and the foreign language teaching framework proposed by Yang Lu (2007). It can be considered as the following:
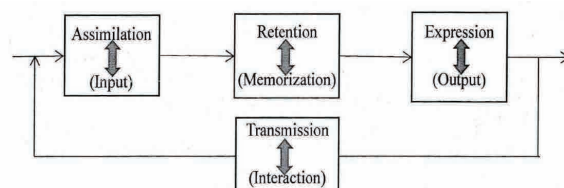

Figure 1
The Framework of Foreign Language Teaching on Memetics (Yang, 2007)

3.4.1 Input Stage (Assimilation)

The essence of this stage comes from the first stage of meme life cycle--- assimilation, which is the process of arousing the attention of the host (participants from EC), being understood and accepted by them. First of all, language input needs to be interesting. Every time English practical writing teaching is carried out, teachers can take a variety of activities and forms to attract students' attention. What's more, on the basis of Krashen's input hypothesis, language input also needs to be understandable and beyond the present level, but it should not be too easy or too difficult. Last but not least, only when the students are willing to pay attention to and understand the material carefully, can they better accept the language input. Teachers need to explain the meaning and usage of these memes from language forms, words, phrases, sentences and texts as well as to provide a large number of materials to help students increase their language input, which can help students better remember these memes. Through reading and understanding the relevant writing materials provided by teachers, students can know the background knowledge of writing related topics, which can help them better master the memes of language content. Therefore, language meme input includes two parts: language form memes and language content memes.

A. To train language form memes. After analyzing the structure of English practical writing, the author divides the language form memes into four parts: vocabulary, phrase, sentence and passage. The author will analyze the application of these four parts in detail:

a. Words: There are two kinds of vocabulary: semantic words and functional words. The number of function words is limited, but the types and numbers of semantic words are more, which has a certain connection with each topic, so the author focuses on the analysis of semantic words. In the English practical writing teaching based on memetics, teachers should focus on explaining the types of memes to students, including genotype memes and phenotype memes. Genotype memes refer to memes with the same content and different forms, in other words, synonyms. For example, 'like' can be replaced by 'love, enjoy, appreciate, etc'. Phenotype memes are memes with different contents and the same form such as 'firstly, secondly, thirdly... finally'. The steps of writing teaching based on memetics are as follows: The first step is that the teacher gives a model article and a genotype meme and asks the students to find out the related genotype memes and list them. Then, the teacher instructs the students to brainstorm from the listed semantic words or consult the relevant dictionaries to come up with the genotype memes in relation to the topic. The last step is that teachers need to teach students how to use the two kinds of memes correctly. In the whole process, it is the key procedure that how teachers to select semantic words. They should choose some words that students are familiar with or often use, and them need to explain the meaning and usage of

these words to students so as to attract students' attention, help students understand deeply on them. That is, students can obtain input effectively.

b. Phrases: Similar to vocabulary learning, teachers need to summarize some frequently used phrases related to topics and explain their meanings and usages to the subjects. At the same time, teachers should pay special attention to explain the types of memes to students, including genotype memes and phenotype memes. Genotype memes, such as 'in one's opinion, as far as someone be concerned, from one's perspective'. Phenotype memes such as 'on the one hand...on the other hand; for one thing...for another thing'. What's more, the teacher should teach students how to use them.

c. Sentences: The teachers are obliged to teach students how to cite genotype memes and how to flexibly transmit phenotype memes. On the one hand, teachers should explain in detail that the types of genetype meme citations are consistent. For example, *A bosom friend afar brings distant land near. A friend in need is a friend indeed*. The two sentences are used to depict the friendship. *No pains, no gains. Where there is a will, there is a way.* These two sentences are about the success needs to put in the diligence. The correct use of the old sayings and epigrams can not only beautify the composition, but also increase the scores of composition. On the other hand, in order to avoid boredom and repetition, teachers need to teach students how to use phenotype memes flexibly according to different topics. Shakespeare has ever said, "To be or not to be, that is a question." If it is used for "Does college entrance examination English need reform", it can become---"To reform or not to reform, that is a question." If it is used for "Is competition needed in learning", it can be---To compete or not to compete, that is a question. By learning to use phenotype memes flexibly, students can change sentence patterns according to topics and enrich the content and structure of articles. Meanwhile, teachers can also teach students to use some compound sentences, such as object clause, predicative clause, and attributive clause in order to enrich the content and structure of the composition and to prefect it.

d. Passages: In order to teach students to write a complete structure and content-rich article, not only meme teaching should be carried out from lexical phrases and sentences, but also the structure should be taught to ensure the logicality and coherence between sentences. It is necessary to teach students some words or phrases such as causal relation, turning relation and coordinating relation. Words and phrases expressing turning relation, such as, 'however, whereas, yet, nevertheless'; Words and phrases expressing coordinating relation, such as 'as well as, also, too'.

B. To train language content memes

Teaching students to write a good practical article not just teach them to use memes in language form, but also

needs memes in content to enrich the article. In addition to teaching how to use genotype memes and phenotype memes, teachers also ought to provide materials related to the background information of the topic as well as explain their meaning and usage so that students can better accept the language meme input on the basis of understanding.

3.4.2 Memorization Stage (Retention)

Similar to the second phase of meme life cycle, meme is a storage method of language memes. This kind of memory does not refer to the rote memorization in traditional teaching, but the teacher's explanation of the input content and usage of language memes, teaching certain recitation skills so that these language memes can be processed in depth in the mind, through repeated reading and memory, teachers' spot check and group mutual check and other ways to realize understanding memory, and through repeated writing practice, to make these languages memes become "strong memes (memes with strong vitality, which can be repeatedly copied and extracted at any time)", which are really internalized in students' minds and become a part of the body. In this stage, teachers play a greatly significant role in helping and supervising recitation.

C. Output Stage (Expression)

Comprehensible input and memory are designed to help output effectively. The output corresponds to the third stage expression of the meme life cycle. Output is to use the previous comprehensible input and memory content for writing. For the first time to use memetics to guide English practical writing, teachers need to tell students the steps of writing: firstly, examine the topic and list the outline related to the topic; secondly, list the appropriate language memes learned before according to the topic; thirdly, choose the appropriate sentence templates and conjunctions in accordance with the content; fourthly, complete the writing with the content listed above. In this process, teachers need to encourage students to use genotype memes and phenotype memes flexibly to imitate writing creatively.

D. Interaction Stage (Transmission)

Corresponding to the last stage of meme life cycle, it is a way to consolidate memes. The interaction in writing teaching includes two kinds of interactions between students between the teacher and students. Firstly, hand in the composition. Two teachers who have the enough experience of correcting the composition in the college entrance examination will do the correction. Then, send the composition to each other for group evaluation. In order to make students interact with each other better, teachers should divide students into groups. According to the number of students and the level of English practical writing, teachers should divide students into 10 groups (five students/ group). In the process of communication, team members need to draw out words, phrases or sentences which are good and they are confused with,

then share and discuss, and exchange their opinions and suggestions. After the group discussion, the author will find out the excellent articles and the problems that most people have, and then analyze the excellent compositions and read them aloud. Finally, the students need to rewrite this composition. In this way, students can learn and understand how to use memes correctly.

In the traditional writing teaching, the result teaching method is adopted by most high schools. This teaching method pays more attention to the teaching results and is based on the behaviorism theory in psychology. There are three steps in teaching, the first step is to be familiar with the model text; the second step is to control writing; the third step is to give feedback. The detailed steps of writing teaching are as follows:

a. Familiar with the Model Text: similar to giving a stimulus in behaviorism theory, in writing, model text is the stimulus. The teacher first gives a model text, and then simply analyzes the article from vocabulary, phrases and sentences to teach some simple writing skills, but does not require students to recite;

b. Control Writing: the process of students' writing is equivalent to giving 30 minutes to the students in response to the stimulus. Students are required to imitate according to the writing requirements and the given sentence template within the specified time. There is no communication and interaction between students and teachers in this process.

c. Give Feedback: after the writing is completed, the students hand in their own composition, and there are two teachers who have the experience of changing the test paper for college entrance examination to correct the score. The only feedback given is the score, and the high score proves that the composition is well written; on the contrary, the composition is not well written. Although the score is the most direct value to show the level of composition, but it is also too direct, so it will cause students who write well do not know where they write well, students who write poorly do not know how to modify their composition to form a vicious circle.

3.5 Data Analysis

Before the beginning of teaching practice and after the end of teaching experiment, the author will leave enough time for questionnaires in the experimental class and the controlled class. After the completion of the survey, the questionnaire should be taken back in time and carefully checked to avoid random filling and to ensure the reliability of the questionnaire. At the end of the experiment, the author will use SPSS 22.0 to analyze the changes in the attitude of the experimental class towards English practical writing before and after the English practical writing teaching with memetics in senior high school.

In addition, after the teaching experiment, five students were randomly selected from the experimental class to

understand the students' views on their English writing level and teachers' methods after the experiment. The author makes a detailed record by using MP3.

Both the pre-test and the post test are completed in class. Among them, the pre-test is completed in the first class of the teaching experiment, which is conducted in the experimental class and the control class respectively. The post-test is completed in the last class of the teaching experiment. It is also conducted in the experimental class and the control class respectively. At the end of the experiment, the data will be input into SPSS 22.0. By using paired sample T-test and independent sample T-test, the scores of the experimental class and the control class in the pre-test and post-test will be analyzed respectively, so as to answer the first research question of this study, that is, how the English practical writing teaching in senior high school based on memetics will affect students' English writing ability.

To sum up, the experiment consists of five parts---pre-questionnaire, pre-test, post-questionnaire, interview and post-test. The data from these aspects are used to answer the two questions which are put forward above.

RESULTS

4.1 Results of Pre-test and Post-test of English Writing Proficiency Test

4.1.1 Results and Analyses on Pre-test

At the beginning of the semester, the composition from the college entrance examination English national paper in 2018 will be distributed in EC and CC on February 20th online. This composition is an English practical writing on how to write a letter in order to inform Terry some relevant details about Chinese customs. Its full scores is 25 points.

Table 1
Descriptive statistics of pre-test

	Experimental class	Control class
N	54	52
Mean	12.11	12.38
Median	12.00	12.50
Std. deviation	4.733	5.229
Minimum	2.00	3.00
Maximum	22.00	22.00

In Table 1, descriptive statistics presents the scores of pre-test in the two classes. The mean score of the experimental class is 12.11 while the control class is 12.38. Although the minimum score of the experimental class is 2 and the control class is 3, but both of them have the same highest score. From these statistics of the table, both of the two classes have not so much difference so we can indicate the experimental class and the control class are similar in the English writing proficiency.

Table 2
Independent samples test for Pre-test of CC and EC

		F	Sig.	t	Sig. (2-tailed)	Mean Difference
Pre-test	Equal variances assumed	1.426	.235	.283	.778	.274

Note: EC=Experimental Class CC=Control Class

To satisfy the condition that the experiment can be carried out successfully, the independent samples test can testify whether EC and CC have significant difference or not. We can see the mean difference in Table 2 is 0.274 that shows the average score of CC 0.274 points higher than EC. The sig.(2-tailed) is 0.778>0.05 that reveals EC and CC have no significant difference for the new term in English practical writing proficiency before the new teaching mode with memetics is put into effect.

4.1.2 Results and Analyses on Post-test

At the end of this semester, the four-month experiment finished and the post-test ---college entrance examination English national paper in 2016 on English practical writing was carried out on June 15th, 2020. The comparison of the post-test between EC and CC was implemented to conduct the further research in two classes.

Table 3
Descriptive statistics of post-test

	Class	N	Mean	Std. deviation
Post-test	EC	54	15.19	4.968
	CC	52	12.81	5.329

As we can see in the Table 3, the average scores of the experimental class is 2.37 points higher than of EC (EC:15.19), which presents the English practical writing proficiency more highly than CC(CC:12.81). Comparing the post-test with the pre-test from the mean score, it is clear for us to find that after using the memetics on English practical writing during the four-month teaching experiment, the writing marks of the experimental class has had improved dramatically. Therefore, it proves the new teaching method of applying memetics to the English practical writing on the improvement of students' English practical writing proficiency works. As to CC, its mean score in pre-test is 12.38 and in post-test only is 12.81, which means there is no significant difference between pre-test and post-test.

Table 4
Independent samples test for post-test of CC and EC

		F	Sig.	t	Sig (2-tailed)	Mean Difference
Post-test	Equal variances assumed	1.172	.282	-2.377	.019	-2.377

As is shown in Table 4, it exhibits the comparison of post-test between the experimental class and the control class by independent samples test. What's more, according to p value<0.05 and on the basis of Levene's test, equal variances assumed is chosen in this situation. From the result of p value, we can find it clearly that

there is significant difference in post-test between EC and CC. That is, after the four-month experiment and using memetics on English practical writing, students in EC made a lot greater progress in English practical writing than students in CC. From the figures above, it is known that English practical writing on the basis of memetics contributes to students' English practical writing proficiency. Thus, we can draw the conclusion that those students who receive the combination of memetics and English practical writing become better at practical composition than those who not.

4.1.3 Paired-Samples T Test of the Experimental Class and the Control Class

We have done an analysis by using independent samples test on the results of pre-test and post-test of EC and CC from the standpoint of longitude. The following will analyze the statistics from paired-samples t test of EC and CC from the perspective of the horizon.

Table 5
Paired samples statistics of EC and CC

		Mean	N	Std. deviation
Pair 1	Pre-test of the experimental class	12.11	54	4.733
	Post-test of the experimental class	15.19	54	4.968
Pair 2	Pre-test of the control class	12.38	52	5.229
	Pre-test of the control class	12.81	52	5.392

In accordance with pair one of paired samples statistics of EC and CC, it shows the mean score of pre-test and post-test in EC is 12.11 and 15.19 respectively, which presents the average scores in post-test is 3.18 points higher than in pre-test. In other words, students performed better in English practical writing after the four-month English writing teaching combining the memtics. However, in pair two, students' average points in pre-test and post-test are 12.38 and 12.81 respectively, which indicates there is no significant difference when students only have received the traditional English writing alone. Thus, students in the control class make a little smaller progress.

Table 6
Paired samples test of the EC and CC

		Mean	Std. deviation	t	Sig. (2-tailed)
Pair 1	Pre-test & Post-test of the experimental class	-3.074	1.892	-11.94	.000
Pair 2	Pre-test & Post-test of the control class	-.042	2.321	-1.315	.195

From Table 6, in EC, it can be seen that the gap between pre-test and post-test is obvious. The two tests of the significant difference is 0.000<0.05 that means there appears significant difference in students' English practical writing proficiency. Owing to the p value of the

control class a lot greater than 0.05, students in CC can get ahead but less than students in EC who have obtained knowledge on English practical writing with memetics. The above statistics can be shown that both EC and CC make advance, but students in EC make greater progress in the proficiency of English practical writing. That is to say, the method of memetics applying to the English practical writing teaching contributes more to improve students' proficiency of English practical writing.

CONCLUSION

Aiming at the first question, after analyzing and discussing the results, it is not easy for us to know that the new writing teaching method on the basis of memetics indeed can make students in senior high school perform better. For one thing, there is no obvious difference in the writing proficiency of the two classes before the experiment. More exactly, before the experiment, the mean score of EC(M=12.38) is 0.274 points higher than of CC(M=12.11) and the sig. (2-tailed) value is 0.778 which is rather higher than 0.05. All these statistics are presented that the writing proficiency of EC is similar to CC and the experiment is meaningful. However, in the post-test, after students in EC and CC receiving different teaching modes for four months, greatly significant difference is shown to us. More exactly, students in the experimental class do better on the practical writing than in the control class. After the four-month experiment, the mean score of CC(M=12.81) is 2.37 points lower than EC(M=15.19) and the sig. (2-tailed) value (p=0.019) is also lower than 0.05. For another, compared the two class themselves, the new mode on the basis of memetics has bigger influence than the traditional writing method. Students in the experimental class make greater improvement in accordance with the mean score from 12.11 points to 15.19 points which has increased 3.08 points as well as the p value 0.000<0.05. Whereas, there is not too much change in the control class because its p value (0.195) is still bigger than 0.05.

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