

# **A Study on Pigai System-based RTMI Teaching Model of English Writing**

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**Abstract.** Based on the theory of constructivism and the process theory of composition, the paper discusses a teaching model of Real-Time and Multi-member Interaction (RTMI) based on Pigai system and an empirical study on the new model was conducted in a vocational college in Southern China. A year's study shows that this teaching model helps promote writing abilities and interests of vocational college students, improves their learning methods and habits and encourages them to learn independently and cooperatively.

## **Introduction**

In traditional English writing classrooms of vocational colleges, teachers usually explain writing skills first and then students are asked to write an essay. This kind of teaching model cannot arouse students' interests. And because there are more than 45 students in a class, it is very difficult for a teacher to mark their essays and give feedback promptly. However, most vocational college students have difficulties in expressing themselves in English. Without prompt and constructive guidance, they may feel frustrated about English writing. [1] Therefore, it is high time we break through the traditional mode of teaching writing by making use of modern information technology to help improve students' writing abilities.

Our research attempts are to apply Pigai system which is a system of Automatic Essay Scoring (AES) in teaching of English writing in vocational colleges, construct a Pigai system-based teaching model of RTMI based on the theory of constructivism and the process theory of composition and explore how to better integrate modern information technology and teaching of English writing in order to promote teaching of English writing and improve students' writing abilities.

## **Pigai System-based RTMI Teaching Model of English Writing**

### **Brief Introduction to Pigai System**

Pigai system is an AES system which offers online scoring service based on English corpus and cloud computing technology. It generates holistic score, overall comments and sentence-based comment. [2]

Pigai system has the following features and functions: (1) real-time feedback and sentence-based evaluation. It gives real-time scores, points out errors in spelling, grammar, vocabulary and collocation and makes modification suggestions. Besides, it provides language exercises, recommendation for collocation and sample sentences, etc. With the comprehensive guidance, students can learn how to write on their own. (2) Plagiarism detection. Pigai system checks whether submitted essays duplicate other students', corpus or web and offers duplication index to teachers for reference. (3) Progress report. Pigai system records the development process of writing abilities of a college, a class or a specific student, which helps teachers know general weaknesses of the school or the class and weak points of individuals. [3]

### **Pigai System-based RTMI Teaching Model of English Writing**

The writing teaching model of real-time and multi-member interaction (RTMI) on Pigai system is based upon the theory of constructivism and the process theory of composition. "multi-member interaction" refers to the interactions between teachers and students, students and students, students

and system, which are conducted in classroom ,outside classroom or three-dimensional virtual environment. “Real-time” means that Pigai system gives feedback the instant that students submit their essays.

In the model, a teacher plays the role of guide, facilitator and coordinator. Students experience the process of writing and finish their writing tasks by exploring the craft of writing and cooperating with others, thus improving their writing abilities. The process of writing includes three steps: planning, drafting & revising and evaluating. At the step of planning, the teacher assigns a writing task to students, offers relevant resources for writing and conducts teaching activities to encourage students to think and get inspired. At the step of drafting & revising, students write their essays on Pigai system and submit them after they finish writing. The system will give a holistic score, overall comments and sentence-based comments which point out errors in sentences. Students revise their essays according to the comments and submit their essays again. Revising and submitting can be done many times within fixed time. At the last step, students conduct peer evaluation on Pigai system according to writing criteria given by the teacher. And the teacher gives overall evaluation of students’ essays in the classroom and offers individual guidance. Through peer evaluation and teacher’s evaluation, students will know how to overcome their shortcomings in writing and how to write a good essay. The evaluation can not only make up for the deficiency Pigai system has in the diagnosis of essay’s logic and paragraph organization[4], but it can also help students better understand writing criteria.

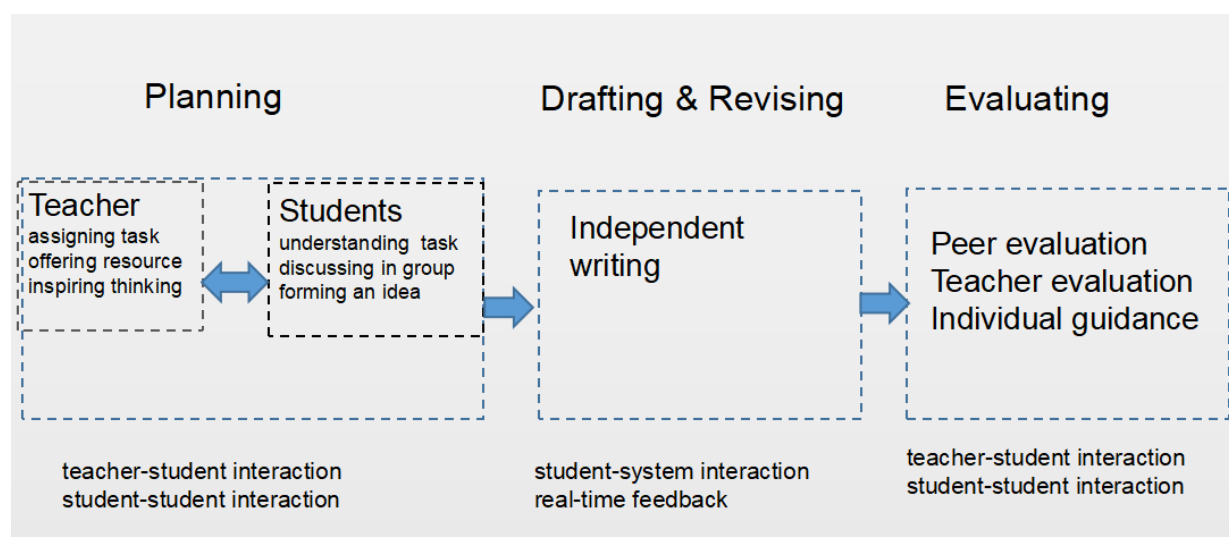


Fig. 1, Pigai system-based RTMI teaching model of English writing

## Verification of Pigai System-based RTMI Teaching Model: Purpose, Subjects and Tools

### Purposes

The purpose of the verification is to answer the following the questions:

Does the Pigai system-based RTMI teaching model help enhance students’ writing abilities?

Does the Pigai system-based RTMI teaching model help improve students’ learning methods and habits?

### Subjects

The subjects were 93 students the writer taught in the two classes of a vocational college in Hubei province. They were Business English majors enrolled in 2006. There were few discrepancies in English achievement performance between the two classes, which had 47 students and 46 students respectively. The new model was adopted in the experimental class, while traditional teaching method was used in another class-control class. Both of the two classes were not told that they would be participating in an experiment.

## Tools

The following tools are used in the research:

Questionnaire survey, interview, two tests before and after the experiment, Spss16.0

## Results and Analysis

One-year research shows that real-time feedback (real-time scoring and sentence-based comments) effectively stirs up students' writing motivation. Multi-member interactions between teachers and students, students and students, students and system has developed students' autonomous learning abilities and cooperative abilities. And the new model has improved students' writing habits and writing abilities.

### Students' Writing Abilities Have Been Enhanced

The results are as follows:

Table 1, Before-test and after-test statistics

Test content	Descriptive statistics		T-test	
	Average score	Standard deviation	T value	P value
Experimental class	60.2111	12.52837	-.841	.403
Control class	57.7907	14.43055		
Experimental class	78.5714	7.06466	2.777	.007
Control class	74.5811	5.47914		

Before the test, the average writing score of the experimental class is 60.2111 and its standard deviation is 12.52837. As for the control class, its average writing score is 57.7907 and standard deviation is 14.43055. Although the average writing score of the experimental class is higher than that of the control class, the gap between the two classes is not significant, which is also proved by relatively low T value.  $P = 0.403$ , higher than 0.05, indicates that the differences in writing academic achievement between the two classes is not statistically significant before the experiment. In other words, there is little difference in writing abilities between the two classes. After the experiment, the average writing score of the experimental class is 78.5714 and its standard deviation is 7.06466 while the average writing score of the control class is 74.5811 and its standard deviation is 5.47914, which shows that after one-year writing practice, the academic achievements of the two classes have improved and the gap in academic achievement among each class is becoming narrow. However, the average writing score of the experimental class is obviously much higher than that of the control class. The result of T-test shows that the difference in writing ability between the two classes is significant, which proves that the new model is more effective in enhancing students' writing abilities.

The results of the questionnaire survey and interviews also prove that the new model has positive impact in enhancing students' writing abilities. When asked the question "Compared with traditional teaching method, what do you think of the new teaching model?" 60% students believed that the new teaching model achieved better effect. 78.8% students thought their English writing abilities improved a lot, mainly in vocabulary, sentence pattern and text structure. The interviewees said they mastered more vocabulary and sentence patterns and understood text structure better. When writing, they knew how to express in English and spent less time in finishing writing

## Students' Writing Methods and Habits Have Been Improved

Table 2, Results of survey on effects of RTMMI teaching model

	Writing ability	Interests in writing	learning methods	writing habits	Reducing Writing anxiety	Clarity wring purpose	autonomous learning ability	Cooperative ability
great	15.6%	13.3%	13.3%	11.1%	17.8%	15.6%	22.2%	13.3%
good	62.2%	55.6%	60%	55.6%	35.6%	57.8%	44.4%	64.4%
little	22.2%	26.7%	26.7%	33.3%	42.2%	26.6%	33.3%	22.2%
no use	0%	4.4%	0%	0%	4.4%	0%	0%	0%

Table 2 shows that 73.3% students believe that they have improved their learning methods and they begin to try various learning methods and means in writing, such as searching online, communicating with others, asking teachers for advice, etc. 66.6% students thought that their autonomous learning abilities improved. They often took the initiative to solve problems by accessing the internet when they did not know how to express in English. And in order to get high scores, they revised their essays many times according to the comments given by Pigai system. 77.7% students believed that their cooperative abilities improved. They stated that they often got inspired from group discussion which also enhanced communication with other students. 66.7% students held that the new model was a great help for developing their writing habits. The interviewees said they developed the habit of revising their essays which they didn't have before.

### Students' Interests and Willingness in Writing Have Been Enhanced

The survey indicates that the new model enhances most students' interests in writing and reduces their anxiety. The interviewees said when they saw the score and ranking the instant they submitted their essays, they would like to revise their essays for higher scores to exceed other students.

### Students Have Clearer Writing Purposes

The new model fosters students' positive attitude towards English writing and makes them think about their purposes of writing. At interview, Cindy Yang said "I didn't know why I practiced writing, but now I know the purposes of writing are to improve my language ability and logical thinking skills and help me pass CET 4" Jenny Zou said she practiced writing "in order to be able to communicate in English by writing in the future work and pass CET 4." [5]

## Summary

Traditional teaching method focuses on the result of writing rather than the process of writing, which exerts bad effects on the development of students' writing abilities and habits. However, Pigai system-based RTMI teaching model focuses on the process of writing and values the interactions between teachers and students, students and students, students and system. Under the guidance of teachers, students experience the process and finish their writing tasks by exploring and cooperating. The new model shows a brand-new teaching idea—student-centered teaching idea, which is more beneficial to the foster of students' writing abilities, autonomous learning abilities and cooperative skills. Although it is still in trial stage, the model has positive significance on English writing teaching and is worth deep research for broadening prospects.

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