

## The Model of “Plan Do Check and Act” to Improve Chinese EFL Learners’ Writing Strategies

ZHAO Pu<sup>[a]</sup>,\*

<sup>[a]</sup>School of Foreign Languages, Northeast Petroleum University, Daqing, China.

\*Corresponding author.

Supported by Project on Educational Reform Funded by Northeast Petroleum University.

Received 12 March 2014; accepted 28 June 2014  
Published online 27 July 2014

### Abstract

PDCA (Plan Do Check and Act) is a continuous cycle improving writing strategies on quality check. The cycle can be used in varied writing stages. The study explores the function of PDCA on writing class and the role on writing training. The circle of PDCA process was used in each of the teaching steps. In this study, the following four specific questions are to be answered: 1) What strategies are the most frequently employed by non-English majors in English writing? 2) What strategies does PDCA exert on? 3) Is there any difference between the experimental group and contrast group in writing strategies use? If there is, what is it? 4) Is there any difference in writing proficiency between experimental group and contrast group? The purpose of the research is to discover the effect of the use of PDCA on the enhancement the writing skills, which will have positive predictors on writing achievements. The findings testified after treatment there produced great significant difference between the experimental group and contrast group on strategy use which have improved writing quality.

**Key words:** PDCA cycle; Writing strategy; Writing proficiency

Zhao, P. (2014). The Model of “Plan Do Check and Act” to Improve Chinese EFL Learners’ Writing Strategies. *Higher Education of Social Science*, 7(1), 107-112. Available from: URL: <http://www.cscanada.net/index.php/hess/article/view/5280> DOI: <http://dx.doi.org/10.3968/5280>

### INTRODUCTION

Linguists and pedagogical specialists reach a common concept that it is easier for EFL or ESL language learners to listen, speak and read L2 than write it. English writing could promote language learning and enhance students’ thinking ability. However, Writing is a complex cognitive activity and many learners who have studied English for several years end in failure when they wrote an article. Writing has always been a problem in college English teaching in China. Pedagogues view writing much more as a finished product than a complex process. consequently, little attention has been paid to such questions like “How do the students compose English written essays?”, “What difficulties do they come across in the writing process?”. Teachers pay little attention to student’s learning process and are confined to revise the writing in words and grammar usage in the finished part, only scratching the surface of strategic teaching. Therefore, the writing strategies are not taught systematically. Students’ understanding of English writing is unsystematic and fragmented. So it is necessary to impart writing strategy which will be beneficial for teachers to input the writing strategies in writing teaching process, and enhance students’ writing skills. The main purpose of the study is to introduce the PDCA cycle to improve writing strategies which will be positive predictors of writing proficiency.

### 1. LITERATURE REVIEW

#### 1.1 PDCA Cycle in English Writing Field

The study is intended to introduce the model of PDCA to improve the writing strategies into college English writing. It hopes to help teachers to be aware of the important role that PDCA in writing strategy training play. And meanwhile, it can also help students learn to enjoy

the process of writing, stimulate students’ motivation in English writing and promote the development of their language learning as a whole.

The PDCA circle is admitted to early emerge from the manufacturing discipline which was initiated by Shewhart and then developed by Deming in 1950 as the continuous quality improvement method (Sallis, 2005; Dahlgaard, Kristensen & Kanji, 2007).

The abbreviation PDCA stands for the verbs Plan (planning), Do (implementing), Check (reviewing), Act (taking further actions). The PDCA cycle comprises the four-step work patterns which are useful to mend a process, including the problem analyzing process which is generally employed in the management of quality (HCI, 2010). Based on its principles, the PDCA cycle according to Masaaki (1991), is a process of achieving the specified standards, revising the standards, and then replacing the specifications with the new quality standards that are better (Sallis, 2005).

Let’s explain a PDCA cycle in a writing class: In P session, the author prepares the implementation of strategy training, including materials to be taught, practices to be presented. Then she will raise several questions to be answered: (a) What problems do we come across in writing? Problems must be pointed out before starting writing. (b) What do measures produce to prevent problem arising? The author develops writing skills which are not merely syntax and rhetorical devices given, but practical skills that students would really need. Students should be empowered to harness writing strategies and develop their abilities to adjust to different writing tasks. In D session, students are assigned to finish the writing task with the author’s assistance and informed to cooperate with their peers to construct activities in three stages (pre-writing, while-writing, revising), during which their interests’ may be aroused. In C session, students will check the writing outcome under the author’s supervision. They follow the rule “S to S”(student to student) or “S to T” (student to teacher) to receive responses which direct improvement in the revising stage. In the A session, students summarize the fruits and weaknesses of the results and make improvement for future work. The above example is a PDCA cycle which can be duplicated into small cycle in the writing process. That’s to say, big PDCA cycle embraces smaller ones.

## 1.2 The Classification of Writing Strategy

Oxford (Nyikos & Oxford, 1993; Oxford, 1990) summarized all the different taxonomies of language learning strategies published over the past years, and integrated them into a more coherent and more comprehensive typology. She developed a strategy system containing two major classes—direct and indirect. Direct strategies are composed of memory strategies, cognitive strategies, and compensation strategies (Oxford, 1990, p.37). Indirect strategies are

strategies which support and manage learning without directly involving the target language. The indirect strategy class is made up of three groups: metacognitive strategies, affective strategies, and social strategies. The author attempts to only introduce those which are believed to be useful for research. Memory strategy is omitted and social strategy and affective strategy are bound together, named social-affective, to investigate students’ strategy use.

---

## 2. METHODOLOGY

---

### 2.1 Subject

The 194 participants in this study were randomly selected from non-English major sophomores in Northeast Petroleum University. In this research, the subjects were from different majors including International Business (IB), Electronic Information Science and Technology (EI) and Process Equipment and Control Engineering (PE). The subjects were made up of 120 male students and 74 female students. Class of Information Science and Technology was taken as the experimental group and the number of subjects were 53, the other two as contrast groups, the respective number was 78 (IB) and 63 (PE). Their English writing experience ranged from 8 years to 10 years. Therefore, we could assume that they had formed certain English writing strategies.

### 2.2 Instruments

The instruments used in the data collection were: 1) a revised version of the Writing Strategy Questionnaire (Petric & Czarl 2003); 2) two writing topic from the preceding college English band four. Take the pre-test for example, all the subjects were required to write a composition of about 150 words on the topic “Positive and Negative Effects of Online Shopping”, which was chosen as the topic due to the consideration of difficulty level for the students. They would have some ideas to write. The students’ compositions would be scored according to their content and language respectively. After the written texts were collected, they were marked by two experienced college English teachers.

### 2.3 Treatment

From March to June 2013, an experiment was conducted in the experimental group and the contrast group. There were three periods for instructions in the three groups (45 minutes each) every week. Before the experiment, a pretest was designed to test subjects’ writing proficiency and then followed a questionnaire. After the treatment, a post-test was implemented to testify questions of the study. In the experimental group, the author arranges in-and-out class writing tasks designed by the author. Each period covers a certain kind of strategy training and presents writing activities under the PDCA cycle. In the contrast group, the author makes no change on teaching

design. The contents of the courses were intact and untreated.

## 2.4 Data Analysis

The analysis of the data was conducted using SPSS 13.0. For research question one, descriptive statistics (including mean, frequency and standard deviation) was calculated; For research question two and three, ANOVA (Analysis of Variance) was used to examine the difference between three natural classes on learners' writing strategy employment before and after treatment; For research question four, ANOVA was also used to see whether there was any difference on writing proficiency.

## 3. RESULTS AND DISCUSSIONS

This part will present and analyze the results of the study. Firstly, the results of the questionnaire will be shown in forms of tables. Then, the author will list data of comparisons between experimental group and contrast group on strategy use and writing proficiency before and after the treatment.

### 3.1 Results of the questionnaire

#### 3.1.1 Results of Writing Strategies Use

Table 1 illustrates the results of four categories of writing strategies as a whole. From the table, we can see the order of the mean score of four strategies and the mean of the total.

**Table 1**  
**Order of Four Categories of Writing Strategies**

Writing strategies	N	Mean	Std. deviation
Compensation strategy	194	3.27	.444
Metacognitive strategy	194	2.93	.303
Cognitive strategy	194	2.92	.300
Social-affective strategy	194	2.62	.433
Total	194	2.88	.313

From above Table 1, we can find that the mean of total use of strategies is 2.88. According to the criteria of the frequency of strategy use devised by Oxford (1990), the frequency for each strategy on the 5-point Liker scale is classified into three levels: high (3.5-5.0); medium (2.5-3.4); low (1.0-2.4). Therefore, the result shows that in English writing non-English majors deploy writing strategies at a medium frequency level. The results show that compensation strategies are most frequently used; metacognitive and cognitive strategies are the immediate follower and, socio-affective strategies are the least used ones.

#### 3.1.1.1 Results of Compensation Strategy

Compensation strategies included in the questionnaire are "switch to mother tongue" (item14 and 19), approximating (item 15 and 18), synonym (item 20). From Table2, we can see that the mean score of item 18 (simplify what I want to write if I don't know how to express my thoughts in English) is the highest level of compensation strategy use (Mean=4.19). The mean of only item 14 (starting with

sure sentences) is below 3.0 (Mean=2.50). Compensation strategies are intended to make up for an inadequate repertoire of grammar and, especially, of vocabulary, which is frequently used in writing process, signifying students' vocabulary is not enough.

**Table 2**  
**Descriptive Statistics of Compensation Strategies Use**

Items	N	Mean	Frequency	Percent
Compensation14	194	2.50	41	21.1
Compensation 15	194	3.33	90	46.4
Compensation 18	194	4.19	162	83.5
Compensation 19	194	3.20	88	45.4
Compensation 20	194	3.97	149	76.8
Valid N (listwise)	194			

#### 3.1.1.2 Results of Metacognitive Strategy

Table 3 shows the results of metacognitive strategies use. As shown in Table 3, we can see that the mean score of both item 22 (Write from beginning to end without stopping,  $M=3.43$ ) and item 34 (I only read what I have written when I have finished the whole paper.) are on the top rank. However, we also find that five items are below 2.5: item 35 (When I have written my paper, I hand it in without reading it.  $M=2.24$ ) < item7 (I write an outline of my paper in English.  $M=2.29$ ) < item8 (I write notes or an outline in Chinese.  $M=2.30$ ) < item 13 (I go back to my outline and make changes in it.  $M=2.46$ ) < item 1 (I make a timetable for the writing process.  $M=2.47$ ). The lower mean scores indicate that students can not coordinate their own learning process, define the writing time and make a clear outline. One point that deserves our attention is that students do ask for Chinese explanation instead of English when necessary.

**Table3**  
**Descriptive Statistics of Metacognitive Strategies Use**

Items	N	Mean	Frequency	Percent/ %
Metacognitive1	194	2.47	43	22.2
Metacognitive 7	194	2.29	32	16.5
Metacognitive 8	194	2.30	26	13.4
Metacognitive 13	194	2.46	41	21.1
Metacognitive 22	194	3.43	100	51.5
Metacognitive 32	194	2.52	33	17.0
Metacognitive 33	194	2.73	63	32.5
Metacognitive 34	194	3.08	73	37.6
Metacognitive 35	194	2.24	29	14.9
Metacognitive 43	194	3.61	123	63.4
Valid N (listwise)	194			

#### 3.1.1.3 Results of Cognitive Strategy

Table 4 shows the results of cognitive strategies use. From the table 4, the average scores of item 2 (Revising the requirements.  $M=4.53$ ,  $F=183$ ,  $P=94.3$ ) are highest in cognitive strategies. Using conjunctions (item 29,  $M=3.80$ ) is followed. Although item 17 Focus on Chinese explanation in a dictionary) and item 24 above 3.0 (Read Chinese explanation when choosing synonyms), these mean that students in general neglect English equivalents and are bound to miss the true meaning in a certain

context. Likewise, the score of item 4 and item 5 is the indication that most students start their writing without a written or mental plan.

The rest ten items are below 3.0 which are an indication of medium or low use. The eleven items are: Item 16 (Only focus on English explanation.  $M=2.29$ ), item 27 (Attempt to employ different expressions and choose the best.  $M=2.66$ ), item 30 (Consciously make use of various rhetorical devices.  $M=2.71$ ), item 36 (Consult dictionary when revising.  $M=2.65$ ), item 37 (Make changes in vocabulary.  $M=2.82$ ), item 38 (Make changes in sentence structure.  $M=2.64$ ), item 39 (Make changes in the structure of the essay.  $M=1.96$ ), item 40 (Make changes in the content of ideas.  $M=2.34$ ), item 41 (Focus on one thing at a time when revising (e.g., content, structure).  $M=2.61$ ), item 42 (Drop my first draft and start writing again). The results show again that the use of words, phrases and sentences are confined to limited or repeated sets in while-writing stage. Besides, we can see that most of the students do not make changes on several things when revising, and contents or structure of the essay are not frequently changed.

**Table 4**  
**Descriptive Statistics of Cognitive Strategies Use**

Items	N	Mean	Frequency	Percent/ %
Cognitive2	194	4.53	183	94.3
Cognitive3	194	3.06	60	30.9
Cognitive4	194	3.32	101	52.1
Cognitive5	194	3.32	101	52.1
Cognitive 16	194	2.29	21	10.8
Cognitive 17	194	3.50	110	56.7
Cognitive 24	194	3.31	93	47.9
Cognitive 27	194	2.66	41	21.1
Cognitive 28	194	3.19	85	43.8
Cognitive 29	194	3.80	137	70.6
Cognitive 30	194	2.71	43	22.2
Cognitive 36	194	2.65	46	23.7
Cognitive 37	194	2.82	45	23.2
Cognitive 38	194	2.64	37	19.1
Cognitive 39	194	1.96	10	5.2
Cognitive 40	194	2.34	22	11.3
Cognitive 41	194	2.61	41	21.1
Cognitive 42	194	1.70	5	2.6
Valid N (listwise)	194			

### 3.1.1.4 Results of Social-Affective Strategy

Table 5 shows the results of socio-affective strategies use. We discover that the mean score of item 46 (Expect teachers to give evaluations on writing.  $M=3.51$ ) ranks the highest. Surprisingly, the average score of five items is below 2.4 which is an indication of low use. The five ones include: Item 25 (I ask somebody to help out when I have problems while writing.  $M=2.28$ ), item 44 (I show my text to somebody and ask for his/her opinion.  $M=1.96$ ),

item 45 (I compare my paper with the essays written by my friends on the same topic.  $M=2.14$ ), item 47 (I correct the writing with my classmate.  $M=1.85$ ), item 48 (I give myself a reward for completing the assignment.  $M=2.36$ ). These items have a common feature that cooperation strategies are all below 2.4. Students fail to cooperate with their teachers and peers in various activities such as asking questions, and giving and getting feedback. Meantime, students seldom reward themselves for good work in language learning.

**Table 5**  
**Descriptive Statistics of Social-Affective Strategies Use**

Items	N	Mean	Frequency	Percent/%
Social-affective25	194	2.28	29	14.9
Social-affective 44	194	1.96	14	7.2
Social-affective 45	194	2.14	21	10.8
Social-affective 46	194	3.51	115	59.3
Social-affective 47	194	1.85	12	6.2
Social-affective 48	194	2.36	39	20.1
Valid N (listwise)	194			

### 3.1.1.5 Comparisons of Data Before and After Experiment on Strategy Use

Table 6 shows the results before experiment. According to Table 6, we can see that there is no significance between experimental group ET and contrast IB and PE on strategy use. Meta-cognitive strategies between groups have no significant value ( $F=2.39$ ,  $P=.09$ ). Post Hoc Tests further testify the results ( $M=.09$ ,  $P=.25$  between ET and IB;  $M=.02$ ,  $P=.98$  between ET and PE). Similarly, there is no significance between groups on cognitive strategies ( $F=2.77$ ,  $P=.07$ ). An observation shows the results ( $M=.09$ ,  $P=.18$ ;  $M=.02$ ,  $P=.96$ ). Another statistics are presented in Table 6. It deserves our attention that P value on compensation strategy has positive significance.

Non-English majors have little awareness of writing strategies. They seldom use these strategies in writing. The reason for no statistical significance may be due to their inadequate lack of systematic training about these strategies. 94.3 percent of students in both groups can check the requirements in pre-writing stage. But they have no initiative to examine or reread language and contents in while-writing stage. They only pick up spelling or grammar mistakes, without noticing sentence structure, especially harnessing complex sentences and transformation of synonyms. In revising stage, less than 25 percent of students make no attempt at correcting vocabulary and asking the dictionary for help, not mentioning to change contents and structures, the rate of which is 5.2 and 11.3 respectively. In addition, they lack the repeating strategy, the teacher-cooperating strategy, the peer-cooperating strategy and the self-rewarding strategy. Therefore, it is high time that the researcher designed a



**Table 6**  
**Data Before Experiment on Strategy Use**

Items	F	p	Experiment group	Contrast group	Mean difference	P
Metacognitive	2.39	.09	ET	IB	.09	.25
				PE	.02	.98
Cognitive	2.77	.07	ET	IB	.09	.18
				PE	.02	.96
Compensation	3.04	.05	ET	IB	.04	.85
				PE	.14	.22
Social-affective	.63	.54	ET	IB	.07	.60
				PE	.08	.57

tentative training plan to improve the writing strategies among college non-English majors.

As is shown in Table 7 illustrates the results after experiment. According to Table 7, we can conclude that on the whole the results between groups on strategy use have reached great significant value ( $F=4.43, P=.03; M=0.28, P=.04; M=.04, P=.04$ ), cognitive strategy ( $F=3.86, P=.04; M=.19, P=.04; M=.11, P=.05$ ) and social-affective strategy ( $F=3.31, P=.04; M=.17, P=.05; M=.18, P=.04$ ). After the design of PDCA cycle in writing class, students' interest is intrigued to carry out the plan, implement the writing task, check the work during three writing stages (pre-writing stage, while-

writing stage and revising stage) and make adjustment on action part where students can be fully aware of their weaknesses and make improvement in the next writing task. With a chain of cycle, students attach great importance to identify the general nature of the writing task, the specific requirements of the task and the resources available, make attempt to outline the topic they're interested, determine the task purpose and link their already-known information to the upcoming writing task, and gather supporting information for their topic and note down the ideas that come to their mind. These activities can't implement well without teacher-student and student-student cooperation.

**Table 7**  
**Data After Experiment on Strategy Use**

Items	F	P	Experiment group	Contrast group	Mean difference	P
Metacognitive	4.43	.03	ET	IB	.28	.03
				PE	.24	.04
Cognitive	3.86	.04	ET	IB	.19	.04
				PE	.11	.05
Compensation	2.84	.06	ET	IB	.04	.80
				PE	.03	.90
Social-affective	3.31	.04	ET	IB	.17	.05
				PE	.18	.04

### 3.2 Writing Proficiency Before and After Experiment

Table 8 shows the comparisons between experimental group and contrast group. The results of three groups are positively related. During 3 months' treatment, results of the present study show that metacognitive strategies, cognitive strategies, social-affective strategies are best predictors of writing achievement. Take cognitive strategies for example. Resourcing, translating, analyzing and summarizing are effective strategies to help students understand English. Metacognitive strategies can help students to monitor and control

their cognitive processing. Their English proficiency can be improved by using self-monitoring and self evaluating. Social-affective strategies assist students to utilize social communication interaction with others. Affective strategies help students control their emotions, motivations and attitudes. Learning strategy theory should be integrated into the curriculum so that teachers can be equipped with the knowledge of students' learning styles and strategic preferences for designing teaching materials and activities.

**Table 8**  
**Writing Proficiency Before and After Experiment**

Test	Experiment Group	Contrast group	Mean difference	F	P
Pre-test	ET	IB	2.58	2.60	.15
		PE	3.10		
Post-test	ET	IB	5.58	3.60	.03
		PE	6.10		

---

## CONCLUSION

---

The author witnessed the enhancement of strategy use on the Quality Improvement Cycle, PDCA, which produced a positive significance on writing proficiency. The major findings are as follows: 1). Before treatment, students' awareness of strategy use is in a weak position. They have no routine to deploy strategy in the writing processing. 2). An understanding of the students' use of writing strategies is obtained during treatment; 3). After treatment, metacognitive strategy, cognitive strategy and social-affective strategy positively correlated with writing proficiency. 4). high English proficiency achievers attach great importance to identify the general nature of the writing task and have the initiative to obtain the resources available, but low achievers have little awareness on strategy use, if use them, unconsciously. The study also reflects a fact that students call for interest which is an important factor that influences L2 proficiency. Furthermore, students suggest that the author should cultivate their English ways of thinking through different media or channels. Last but not least, a large number of students usually do not know where to start when assigned a writing topic. How to help students to generate ideas during writing processes should be given more priorities.

All in all, studies on how to improve the students' English writing by way of introducing writing strategies exploring the writing process need further investigation in order to improve the students' writing competence.

---

## REFERENCES

---

- Dahlgaard, J. J., Kristensen, K., & Kanji, K. G. (2007). *Fundamentals of total quality management process analysis and improvement*. London: Taylor & Francis e-Library Publisher.
- HCI.(2010). *PDCA cycle from problem-faced to problem-solved*. Retrieved from <http://www.hci.com.au/hcisite3/toolkit/pdcacycl.htm>
- Nyikos, M., & Oxford, R. (1993). A factor analytic study of language learning strategy use: Interpretations from information-processing theory and social psychology. *Modern Language Journal*, 77, 11-12.
- Oxford, R. L. (1990). *Language learning strategies: What every teacher should know*. New York: Newbury House.
- Petrie, B., & Czarl, B. (2003). Validating a writing strategy questionnaire. *System*, 31, 187-215.
- Sallis, E. (2005). *Total quality management in education*. London: Taylor & Francis e-Library Publisher.