

# THE USE OF PICTURE BOOKS AND HEURISTIC TEACHING METHOD FOR CHINESE WRITING SKILL OF GRADE 3 CHINESE STUDENTS IN SICHUAN PROVINCE, CHINA



<sup>1</sup>Bai Xue and <sup>2</sup>Nipaporn Sakulwongs

Rangsit University, Thailand

<sup>1</sup>252416007@163.com

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## Abstract

This study aimed to compare grade 3 students' writing skill before and after using picture books and heuristic teaching method. It also investigated their satisfaction towards the use of picture books and heuristic teaching method in a Chinese writing course in Sichuan Province, China. The sample group consisted of 30 Chinese students studying in grade 3 in Sichuan Province, China. Data were collected through the use of six lesson plans, pre-test, post-test, and questionnaire, and analyzed using descriptive statistical analysis and paired sample t-tests. The data collection lasted for six weeks and the teaching experiment was conducted online. The results of the pre-test and post-test showed that students in the sample group improved their Chinese writing skill, with a mean difference of 3.4 points between the post-test score ( $\bar{x}=18.13$ ,  $SD=5.34$ ) and the pre-test score ( $\bar{x}=14.73$ ,  $SD=4.89$ ). From the results of the questionnaire, all the items in the questionnaire were rated at the highest level. The majority of the students in the sample group expressed high satisfaction with the use of picture books and heuristic teaching method for Chinese writing skill. These findings provided significant evidence that the use of picture books and heuristic teaching method should be considered as an effective method for teaching and learning Chinese writing skill in Sichuan Province, China.

**Keywords:** Picture Books, Heuristic teaching method, Writing Skill, Student Satisfaction, and Grade 3 Students

## Introduction

According to the new curriculum reforms, aimed at improving the general situation of "difficult writing for students" and "difficult teaching for teachers", picture book teaching and heuristic teaching have gained widespread attention from the academic community.

In China, the appearance of picture books has a history of more than one hundred years. This study reviewed a large number of literature surveys, and it can be seen that picture books have a very significant influence on students' reading and writing. Gao (2014) indicates

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<sup>1</sup>Master of Education Program in Curriculum and Instruction Rangsit University, Pathum Thani, Thailand

<sup>2</sup>Master of Education Program in Curriculum and Instruction Rangsit University, Pathum Thani, Thailand

that picture book reading is a systematic education for students and the basis for developing effective reading habits. She believes that reading picture books can not only cultivate positive reading habits, but also cultivate students' creative and divergent thinking, thereby improving students' language expression ability.

Confucius was the first to promote the heuristic teaching method in China, believing that teachers should build students' enthusiasm from the outside to the inside; while in the West, it was Socrates. Through inspiration and induction, heuristic teaching method helps students improve their creative thinking.

Picture books, as well as heuristic teaching method, play a unique and powerful role in the current writing situation. In addition, both have a positive impact on the improvement of students' writing skill. Combining picture books and heuristic teaching method, however, can make the effects of improving writing more pronounced. This is also the biggest innovation of this study

With all mentioned in this part, this study; therefore, aimed to use Picture books together with heuristic teaching method to improve the Chinese writing skill of Grade 3 students in one of the elementary schools in Sichuan Province, China. It is hoped that the results of this research would provide an alternative teaching and learning method in Chinese writing skill as well as enhance the students' learning satisfaction in the Chinese writing course.

## Research Objectives

1. To compare grade 3 Chinese students' writing skill before and after using picture books and Heuristic teaching method in Sichuan Province, China.

2. To determine grade 3 Chinese students' learning satisfaction in using picture books and Heuristic teaching method to improve their Chinese writing skill.

## Literature Review

### The Development of Chinese Writing in China

Chinese writing education has a long history of development. Composition began in the Western Zhou Dynasty and continued through the Qin and Han Dynasties. This period emphasizes enlightenment and self-cultivation, which means the author's inner cultivation needs to be emphasized. During the Sui, Tang, Song, and Yuan dynasties, the development of writing teaching was relatively stable, and the teaching materials for writing were more stringent. However, the dominant educational thought in this period was still about "meritorious service". The Ming and Qing Dynasties were the heyday of writing. This period is to cultivate students who can write standard "eight-legged essays". In 1901, the government cancelled the eight-legged essay. By the time of the May 4th Movement, writing thought emphasized "the practicality of writing". New China's writing emphasized "individual expression and creativity" (Huang, 2009).

### Chinese writing skill

Referring to an individual's writing skill to express written language. Writing in grade 3 of primary school requires students to learn to observe and write clearly what they are most impressed with and understand. In the character writing topic, students are required to be able to master the character's language, action, psychology, and appearance description. In this study, it was assessed by using pre-test and post-test.

### **Picture books teaching**

Picture books are characterized by rich colors, rich pictures and texts, and strong life and interest, which can attract students unconsciously.

Guo (1998) argued that extensive reading of a large number of books has an extremely positive impact on students' writing skill, and teachers should teach students writing skill and method in the process of reading. Therefore, picture books reading plays an important role in elementary writing teaching. In the field of education, a lot of research has been conducted on picture books teaching, giving different insights into the development of picture books teaching.

Lin (2018) took grade 3 students of a school in Sanming City, Fujian Province as the research object, using qualitative and quantitative research method to compare whether the students' writing skill improved after using picture books for teaching. As can be seen from the test results and interview results of Lin (2018), descriptions of students in the post-test are much more detailed and vivid as compared to the pre-test. According to the survey results of Guo (2018), it can be seen that picture books can stimulate students' interest in writing to a certain extent. In addition, picture books can be used to promote writing teaching from three perspectives: continuation, imitation, and independent creation.

According to the literature review, it can be seen that scholars are increasingly aware of the importance of picture book teaching. Picture book teaching has played an invaluable role in enhancing students' interest in learning. However, the current research field of picture books mainly focuses on reading, and the research on writing is still in a relatively new field. In addition, the current research objects focus on infants and elementary school primary stages, and there are few studies on grade 3 students.

### **Heuristic teaching method**

The heuristic teaching method means that teachers stimulate students' thinking and creativity by guiding them in classroom teaching.

Lin (2021) indicates that the heuristic teaching method can mobilize the enthusiasm of students and the initiative of learning, and can maximize the auxiliary role of teachers. In the context of the new curriculum reform, heuristic teaching has been widely valued by educators. Jia (2020) studied middle school students in grade 7 and proposed that teachers use the heuristic teaching method to stimulate students' creative desire, enable them to pay attention to small details, inject life into their writing, and express their inner feelings through writing. Yu (2018) researched heuristic teaching in primary school Chinese writing classes. He believed that for primary school students, the use of heuristic teaching could not only exercise students' intellectual development but also promote student thinking. This can improve students' writing skill.

In summary, it can be seen that the application of heuristics in writing is of great help to stimulate students' interest in writing and improve students' writing skill. However, it can be seen from the research objects that it is mainly concentrated in the junior high school and high school stage, and there is not much research on primary school writing. And according to the current literature, theoretical research is greater than actual teaching research. Therefore, this research, through systematic practical teaching, will take the grade 3 students as the research object, conduct heuristic writing teaching, and give full play to the advantages of heuristic teaching.

## **Combination of Picture Books and Heuristic Teaching method for Chinese Writing skill Learning**

At this stage, primary school Chinese classes have higher and higher requirements for students' writing. It is an inevitable trend of development to combine picture book teaching with heuristic teaching so that students can cultivate innovative thinking in the process of exploring picture books and improve their writing skill. According to the current situation of

Chinese writing and the relevant literature research, only picture books can be used as a carrier and combined with heuristic teaching to more effectively solve the problem of "distress" in writing.

**Conceptual Framework of the Study**

The independent variable in this study included the use of picture books and Heuristic teaching method, and the dependent variables were students' Chinese writing skill and their satisfaction with using picture books and Heuristic teaching method. Figure 1 illustrates the conceptual framework of this study.

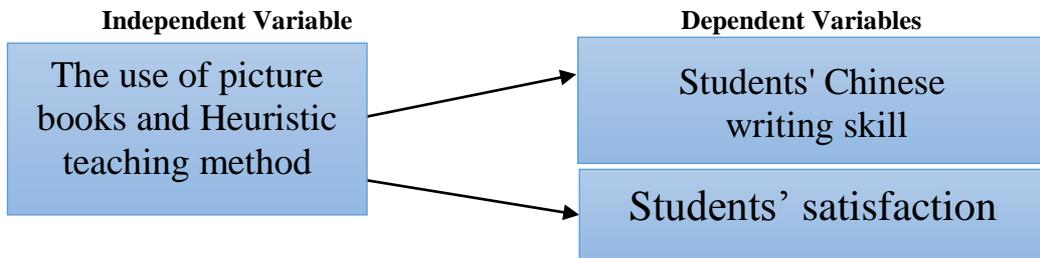


Figure 1 Independent Variable and Dependent Variables

**RESEARCH METHODOLOGY**

**Research Instruments**

A research instrument is a tool designed to collect, measure, and evaluate data on a topic of interest to research participants. In this study, a quantitative method was used to assess the achievement of Chinese students and their satisfaction with picture books and Heuristic teaching method in improving writing skill across grade 3. Figure 2 below describes the research design of the study.

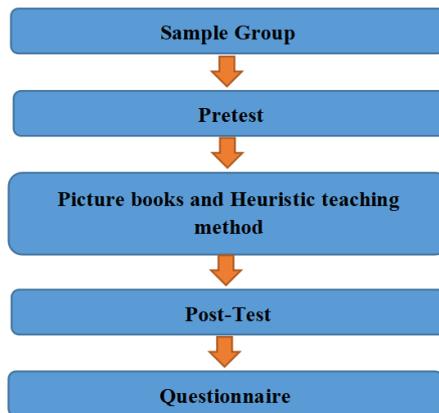


Figure 2 Research Design of the Study

**Lesson Plans**

The researcher developed six 45-minute lesson plans, each of which was taught using a picture book. For a month and a half, the researcher held six weekly meetings with the sample group. The education level of the sample group was taken into account when choosing

the research topic. The researcher obtained the consent of lecturers in relevant subjects before delivering lectures to the sample group.

#### **Achievement Test**

The Chinese writing achievement test was administered to the sample group as a pre- and post-intervention test to measure the participants' Chinese writing skill, especially in character description. The content of the test was closely related to the writing skill learned in the classroom. During the test, participants were asked to write based on pictures and storylines and must include character descriptions (language, action, demeanor, and appearance).

#### **Questionnaire**

An anonymous questionnaire was administered to students to examine their satisfaction with the use of Picture books and Heuristic method during Chinese writing courses. The questionnaire consists of 15 statements on a five-point Likert scale. The statements would be rated from 5 to 1 on a five-point Likert scale. Participants completed a questionnaire after the achievement test. Survey responses completed by participants are confidential and will be used only for this study.

#### **Validity and Reliability**

Validity generally determines if the conducted research measures what the research is intended to measure or the truthfulness of the results (Golafshani, 2003). This item will be applied as a part of the instrument if its value is between 0.67 and 1.00. In this study, all research tools were validated by 3 experts in language teaching and education in China. The result of the IOC validity test of all instruments was +1. This proved the validation of this study.

Reliability is used to measure whether the results are replicable and can be consistent over time (Golafshani, 2003). In order to examine the reliability of the questionnaire, Cronbach's Alpha method was adopted, If the score is less than 0.7, the item is considered unreliable and is deleted. In this study, all questionnaire items were distributed to 30 students who were not in a sample group. Their responses then were computed using Cronbach's Alpha. The result of the reliability test of the questionnaire items was 0.8 which was statistically acceptable.

#### **Participants**

The target population for this study included 210 students from seven classes in an elementary school in Sichuan Province, China. They ranged in age from 8 to 9 years old. The researcher used simple random sampling to select one class (N=30 students) from seven grade 3 classes with mixed Chinese language abilities.

## **Data Analysis**

As shown in Table 1 below, the scores of the students' pre-test and post-test were analyzed using Wilcoxon Signed Rank Test and compared in terms of mean ( $\bar{x}$ ), standard deviation (SD), Z-value, and significance value. From the table below, the pretest mean was 14.73 with a standard deviation of 5.34; the posttest mean was 18.13 with a standard deviation of 4.89. A difference of 3.4 was observed; showing the increase between the pre-test mean and the post-test mean. The significant value (P) obtained was .01, which was lower than 0.05 (P<0.05). which indicated the result was statistically significant.

Table 1 One Sample T-Test

| One Sample T-Test                     |           |       |      |                 |                     |                 |
|---------------------------------------|-----------|-------|------|-----------------|---------------------|-----------------|
| Pre-test                              | Post-test |       |      | Mean Difference | Z                   | Sig. (2-tailed) |
| Mean                                  | Std.      | Mean  | Std. |                 |                     |                 |
| 14.73                                 | 5.34      | 18.13 | 4.89 | 18.13-14.73=3.4 | -4.878 <sup>b</sup> | .01             |
| Significance Level: <0.05-Significant |           |       |      |                 |                     |                 |

Based on the results of the pre-and post-tests, Table 2 showed the difference in scores of the samples on the pre-test and post-test. From the scores of the pre-test, it can be seen that the highest score of the pre-test was 26 points (out of 30 points), and the lowest score was 6 points. However, in the post-test, the score improved significantly, with the highest post-test score of 28 points and the lowest score of 10 points. In part, four of the participants scored six points higher on the posttest than on the pretest. Overall, all participants showed a significant or slight improvement on the posttest, ranging from 2 to 6 points.

Table 2 Pretest &amp; Posttest scores of the sample group

| Student ID | Pretest Scores (Full Score=30) | Posttest Scores (Full Score=30) | Increase in test Scores | % Difference |
|------------|--------------------------------|---------------------------------|-------------------------|--------------|
| 1          | 20                             | 24                              | 4                       | 13.33%       |
| 2          | 18                             | 20                              | 2                       | 6.67%        |
| 3          | 22                             | 24                              | 2                       | 6.67%        |
| 4          | 8                              | 12                              | 4                       | 13.33%       |
| 5          | 12                             | 18                              | 6                       | 20.00%       |
| 6          | 22                             | 24                              | 2                       | 6.67%        |
| 7          | 16                             | 20                              | 4                       | 13.33%       |
| 8          | 8                              | 12                              | 4                       | 13.33%       |
| 9          | 14                             | 16                              | 2                       | 6.67%        |
| 10         | 22                             | 24                              | 2                       | 6.67%        |
| 11         | 12                             | 18                              | 6                       | 20.00%       |
| 12         | 6                              | 10                              | 4                       | 13.33%       |
| 13         | 8                              | 14                              | 6                       | 20.00%       |
| 14         | 14                             | 18                              | 4                       | 13.33%       |
| 15         | 16                             | 22                              | 6                       | 20.00%       |
| 16         | 20                             | 24                              | 4                       | 13.33%       |
| 17         | 24                             | 26                              | 2                       | 6.67%        |
| 18         | 16                             | 20                              | 4                       | 13.33%       |
| 19         | 8                              | 12                              | 4                       | 13.33%       |
| 20         | 12                             | 14                              | 2                       | 6.67%        |
| 21         | 10                             | 12                              | 2                       | 6.67%        |
| 22         | 18                             | 20                              | 2                       | 6.67%        |
| 23         | 16                             | 18                              | 2                       | 6.67%        |
| 24         | 8                              | 12                              | 4                       | 13.33%       |
| 25         | 12                             | 16                              | 4                       | 13.33%       |
| 26         | 12                             | 14                              | 2                       | 6.67%        |
| 27         | 16                             | 20                              | 4                       | 13.33%       |
| 28         | 26                             | 28                              | 2                       | 6.67%        |
| 29         | 12                             | 14                              | 2                       | 6.67%        |
| 30         | 14                             | 18                              | 4                       | 13.33%       |

As shown in Figure 3, the figure showed that average score of the pre-test was 14.73, and the average score of the post-test was 18.13. It was obvious that the average score of the

post-test was higher than the one of the pre-test. In addition, the blue bar on the left represented the mean of the pre-test, and the orange bar on the right represented the mean of the post-test, which was 3.4 points higher than the mean of the pre-test. So, it can be seen that through the teaching of Chinese writing skill for grade 3 students using picture books and heuristic teaching method, every student significantly made progress by achieving better results in the post-test.

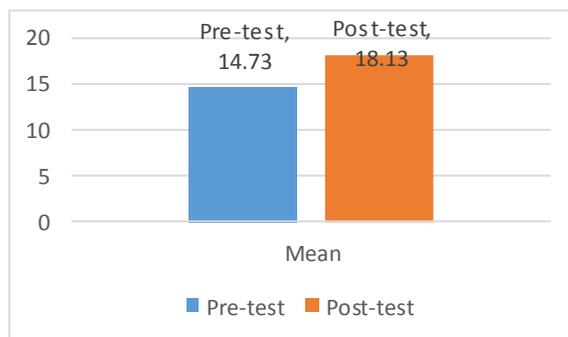


Figure 3 Comparison of pre-test and post-test mean

To collect the data concerning the students' learning satisfaction with the use of picture books and heuristic teaching in writing classes, this study used a five-point Likert scale. This study conducted a questionnaire survey on all 30 (N=30) participants and used descriptive statistics, namely mean and standard deviation, to analyze the specific results of the survey.

As shown in Table 3 shows the average and standard deviation of students' responses to the questionnaire in Part A concerning "interest and motivation". Item 1 received the highest average score ( $\bar{x}=4.70$ ), falling within the range of average scores at the "top" level on the Likert five-point scale. The average scores of item 4 ( $\bar{x}=4.13$ ) and item 6 ( $\bar{x}=4.13$ ) were rated at a high level. In general, the average mean score of all questions regarding the students' learning satisfaction and motivation was at the highest level ( $\bar{x}=4.31$ ).

Table 3 Mean and Standard Deviation: Part A (N=30)

| No. | Part A- Interest & Motivation   | Mean | SD   | Interpretation |
|-----|---|------|------|----------------|
| 1   | Learning to write with picture books and heuristics was fun.                                      | 4.70 | .47  | Highest        |
| 2   | Using picture books and heuristics made learning meaningful.                                      | 4.33 | .60  | Highest        |
| 3   | Using picture books and heuristics made learning interesting.                                     | 4.23 | .68  | Highest        |
| 4   | Using picture books and heuristics helped you to write with more confidence.                      | 4.13 | .68  | High           |
| 5   | Using picture books and heuristic teaching method can stimulate your motivation to learn to write | 4.33 | .79  | Highest        |
| 6   | Picture books provided an authentic way of learning.  | 4.13 | .90  | High           |
|     | Average   | 4.31 | 0.67 | Highest        |

As shown in Table 4, it showed the average and standard deviation of students' responses to the questionnaire in Part B, concerning "Students' Engagement in Classroom". It

was obvious from the data that only item 1 reached the highest average score of 4.47, while other items were in the “high” range of average scores. Therefore, after comprehensive analysis, the average score of participation was 4.20, which was in the range of a “high” average score.

Table 4 Mean and Standard Deviation: Part B (N=30)

| No. | Part B-Engagement   | Mean | SD   | Interpretation |
|-----|---|------|------|----------------|
| 1   | All the activities revolve around picture books and heuristics which were very interesting. | 4.47 | .63  | Highest        |
| 2   | All activities were meaningful with picture books and heuristics.                           | 4.20 | .71  | High           |
| 3   | The teaching method used by the teacher in the classroom was understandable.                | 4.13 | .86  | High           |
| 4   | The pictures and words in the picture book can provide help for writing.                    | 4.10 | .76  | High           |
| 5   | Teachers' ideas on picture book teaching were helpful for my future.                        | 4.20 | .76  | High           |
| 6   | I felt more engaged when using picture books and heuristics.                                | 4.10 | .71  | High           |
|     | Average   | 4.20 | 0.74 | High           |

Table 5 below showed the mean scores and standard deviations of the student’s responses to the questionnaire in Part C, concerning “The Impact of Picture Books and Heuristic Teaching Method on Student Learning”. Part C consisted of only three questions, but their average scores were all at the “high” level. Among them, item 1 achieved the highest average score of 4.17 whereas item 3 had the lowest average score of 4.00. As far as the overall average score was concerned,  $\bar{x}=4.08$ , which was at a “high” level, so it can be confirmed that the use of picture books and heuristic teaching had a positive impact on the students' Chinese writing performance.

Table 5 Mean and Standard Deviation: Part C (N=30)

| No. | Part C-The Impact of Picture Books and Heuristic Teaching Method on Student Learning | Mean | SD   | Interpretation |
|-----|--|------|------|----------------|
| 1   | Using picture books and heuristics helped me improve my writing skill.               | 4.17 | .80  | High           |
| 2   | Using picture books and heuristics enriched my writing language.                     | 4.07 | .83  | High           |
| 3   | Using picture books and heuristics helped me improve my writing achievement.         | 4.00 | .64  | High           |
|     | Average  | 4.08 | 2.26 | High           |
|     | Overall Mean & SD for all 15 items   | 4.21 | 0.71 | Highest        |

To sum up, it can be seen that among the three parts, the average mean score of part A was the highest at 4.31, and the standard deviation was 0.69. The average mean score of part C was the lowest at 4.08, and the standard deviation was 2.26. However, considering the three parts, the average score of the 15 items was 4.21, with a standard deviation of 0.71, which was at the “highest” level. Therefore, the researcher determined that the students were very satisfied with using picture books and the heuristic in their Chinese writing classes.

## Result Conclusion and Discussion

As previously noted, the study generated two main conclusions as follows.

1. Picture books and heuristic teaching method improved to grade 3 students' Chinese writing skill with higher achievement after the intervention.
2. Grade 3 Chinese students elicited positive learning satisfaction with the use of picture books and heuristic teaching method.

The next section discusses the findings and addresses the research question for the study.

### Writing Achievement

The results of the study showed that the use of picture books and heuristic instruction improved students' performance in writing skill. The results of this study were also very remarkable. Among the 30 students, 29 students scored 12 points and above in the total score of 30 points in the post-test. The mean score on the posttest (18.13) was 3.4 points higher than the pretest (14.73). In addition, four students scored 6 points higher on the post-test than on the pre-test. Therefore, the improvement in students' performance indicates that the use of picture books and heuristic teaching had a positive impact on students' writing skill. Therefore, all the above findings successfully addressed the answer to the first question in this study.

In previous studies, there had been similar studies to prove it. According to Lin (2018) that through the method of picture book teaching, students' post-test has made great progress compared with the pre-test. It can also be seen from the research of Li (2020) that the heuristic teaching method has a great effect on improving students' micro-writing skill, and students' writing performance has improved significantly.

### Students' Satisfaction

To collect quantitative data on students' satisfaction with using picture books and heuristic teaching method to learn writing skill, a five-point Likert scale was mainly used in this study. In this study, the scale contained a total of 15 items. Part A was about students' learning interests and motivation, part B was about students' engagement in the classroom, and part C was about the impact of picture books and heuristic teaching method on students' learning. This study also conducted a questionnaire survey on all participants, and the results of the analysis survey can be seen according to the descriptive statistics. The highest average score was 4.21-5.00, the highest was 3.41-4.20, the middle was 2.61-3.40, the lowest was 1.81-2.60, and the lowest was 1.00-1.80. The findings can be summarized as follows:

(1) The questionnaire had a total of 15 items, of which 5 items were rated as the "highest" level. 10 items were rated as "high". None of the items were rated as "disagree" or "strongly disagree".

(2) According to the descriptive statistical results of the questionnaire survey, students were very satisfied with the use of picture books and heuristic teaching to improve students' writing skill. Most notably, none of the questions were rated as highly dissatisfied by any student, which was a stronger indication of students' positive satisfaction with learning to write using picture books and heuristics.

(3) Most students also believed that insisting on using picture books and heuristic teaching method can also enrich their writing materials.

The results of the study showed that most of the students believed that the use of picture books and heuristic teaching can improve their happiness in learning writing, thereby improving their writing skill. In previous studies, there had been similar studies to prove it. According to (Guo, 2018), picture books stimulate students' interest in writing to a certain

extent. Students are more willing to take writing classes. Zhang (2020)'s research found that picture books can improve students' writing skill, and students switch from "forced" writing to "active" writing.

## Suggestions for future research

(1) This study was limited to 30 Chinese students in Grade 3 in Sichuan Province, China. Therefore, in subsequent studies, the sample size can be further expanded, and such data would be more accurate and reliable.

(2) The study time was very short, only 6 weeks, so in order to obtain more significant results, the study time can be extended, Preferably more than half a year, the effect would be more obvious.

(3) This study only investigated a certain school in Sichuan Province, China, so in future research, teachers can study several schools with different geographical locations, and examine the impact of picture books and heuristic teaching method on writing skill from a comprehensive perspective.

(4) This research mainly used picture books and heuristic teaching method to improve students' writing skill, and can also apply picture books and heuristic teaching method to other skill.

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