

The Effectiveness of the Discovery Learning Method in Teaching Color Vocabulary in Mandarin to Kindergarten X Students in Surabaya

Budi Hermawan, Shenny Angelia Sumardi

Faculty of Literature and Language Education, Department of Mandarin Language Education,
Widya Kartika University, Jl. Sutorejo Prima Utara II/1, Surabaya 60113

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ABSTRACT

In this research, the author employs the Discovery Learning method to teach color vocabulary in Mandarin. The aim is to evaluate the effectiveness of this method in teaching color vocabulary to Kindergarten X students in Surabaya. The writing of this research provides an overview of the application of learning using the Discovery Learning method. This learning focuses on enhancing students' ability to identify the colors corresponding to the given vocabulary and to color according to the specified color vocabulary. This research is a quantitative study where the research data consists of pre-test and post-test, which were collected, processed, and compared. The final results show that there was an improvement of 86,54, indicating that Discovery Learning method is effective in teaching color vocabulary in Mandarin to KG A students at Kindergarten X in Surabaya.

Keywords: Effectiveness, Mandarin Language, Discovery Learning Method, Color Vocabulary in Mandarin, Early Childhood

INTRODUCTION

In this rapidly developing era of globalization, Mandarin has become an important second language in the world and one of the official languages of United Nations (Sari, 2021). China is getting more advanced in various fields, which can open job opportunities in the future, as well as opportunities of economic and educational cooperation with China. In Indonesia, Mandarin language learning is still conducted using conventional methods and teacher-centered approaches, which tend to hinder the effectiveness of the learning process. According to Anwar (2019), effective learning has 2 important points: the first is the occurrence of a learning process by students, and the second is there are efforts made by teachers to teach their students. Effective learning facilitates student understanding, fosters an enjoyable atmosphere, and helps achieve predetermined goals. Uno and Muhammad (2022:15) state that effectiveness refers to the percentage of students who have mastered the material after participating in the learning process within a specific time frame.

To improve the effectiveness of Mandarin language learning, the researcher intends to use Discovery Learning as the teaching method. According to Pranoto (2023:27), Discovery Learning is a learning model that encourages the students to actively discover and investigate by themselves, so that the learning outcomes tend to be more long-lasting in their memories and not easily forgotten. According to Roza et al. (2018:236), Discovery Learning is a learning model that highlights the foundation and strengthens scientific thinking, where students act as the subjects of learning and teachers serve as trainers and facilitators in the

learning process. It can be concluded that Discovery Learning method is a learning method where students act as a subject of learning, while teachers act as trainers who guide their students to discover the knowledge they have learned on their own and draw a conclusion from the learning activities so the results obtained by students can be maintained in their long-term memory. Therefore, the researcher conducted a study to measure the effectiveness of using the Discovery Learning method in teaching color vocabulary in Mandarin to students at Kindergarten X in Surabaya.

RESEARCH METHOD

This research was conducted with KG A students at Kindergarten X in Surabaya from September 2023 to June 2024. The reserach instruments included pre-test and post-test assessments featuring eight balloon images labeled with color vocabulary in Mandarin. Then, the average results will be compared. Additionally, the researcher also administered formative tests six times that held after each learning session.

Data Analysis Techniques

The analytical method involves calculating the average scores of the pre-test and post-test. The results can then be used to assess the effectiveness of using the Discovery Learning method in teaching color vocabulary in Mandarin. The following formulas are used to calculate the summative scores for the pre-test and post-test:

$$\bar{x} = \frac{\sum x}{n} \tag{1}$$

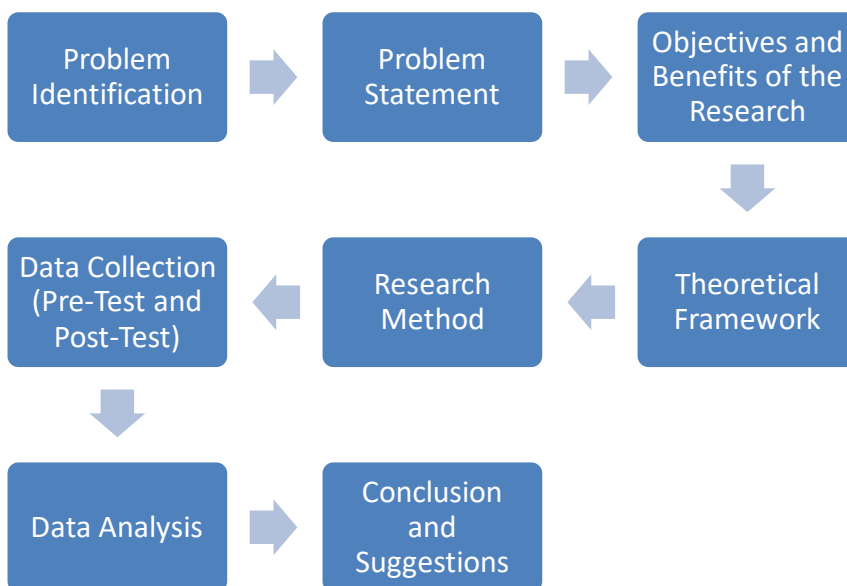
Description:

\bar{x} : average score (mean)

$\sum x$: total class score

n : total number of students

Research Procedure



Picture 1. Research Procedure

FINDINGS AND DISCUSSION

Application of the Discovery Learning Method

To conduct this research, the researcher first undertook preparatory steps, including the creation of lesson plans comprising seven learning sessions and the preparation of tools and materials corresponding to the vocabulary taught in each session. In addition, pre-tests, post-tests, and formative assessments were also prepared. The researcher made limited use of flashcard media during color vocabulary lessons to assist students in pronouncing color vocabulary in Mandarin.

At the first meeting, the students were asked to take a pre-test to measure their ability to master color vocabulary in Mandarin. The researcher employed the Discovery Learning method to teach color vocabulary to Kindergarten A students. This method involved students in activities that included mixing 2 colors using various media. After the colors were mixed, students discovered the new colors they had created. Following this, the researcher taught the new color vocabulary in Mandarin, the students were then asked to take a formative test after learning the new color vocabulary. During the final session, the students took a post-test, and the average scores of the pre-test and post-test were compared to evaluate the effectiveness of this learning method for Kindergarten A students in acquiring color vocabulary in Mandarin. Here are the pictures of the teaching materials and the learning process for teaching color vocabulary in Mandarin through a color-mixing activity:



Picture 2. Water in bottle before mixing red and blue colors



Picture 3. The water in a bottle turns purple after mixing red and blue



Picture 4. The learning process in teaching purple in Mandarin by mixing red and blue

The Results of Applying the Discovery Learning

During the data collection process, the researcher gathered the results of a pre-test, administered before the application of the Discovery Learning method, and a summative post-test, given after using the method to teach color vocabulary. The results of these tests can be seen in the table and chart comparing the average scores of the pre-test and post-test below:

Table 1. Pre-Test and Post-Test Scores

STUDENTS' NAME	PRE-TEST SCORES	POST-TEST SCORES
B	0	100
E	0	100
F	37,5	100
F	37,5	100
G	0	100
J	37,5	75
K	0	100
M	0	100
M	25	100
M	0	100
N	12,5	100
O	0	100
T	0	100
AVERAGE	11,53	98,07

Based on the table above, the average pre-test score was 11,53. After the researcher applied the Discovery Learning method to teach color vocabulary to Kindergarten A students, the average post-test score increased by 86,54 points, reaching 98,07. This increase indicates that KG A students' ability to master color vocabulary in Mandarin has improved significantly. Twelve students scored 100, indicating that they have mastered color vocabulary in Mandarin. However, one student scored 75 due to confusion when coloring the balloons labeled *hēisè* (black) and 白色 *báisè* (white). The comparison of the average pre-test and post-test scores demonstrates that the Discovery Learning method is effective in improving students' ability to master

color vocabulary in Mandarin. Here is the chart comparing the average scores of the pre-test and post-test :

There are 5 indicators of effective learning as outlined by Bistari (2017), can be described as follows:

1. Management of the Learning

In applying Discovery Learning method, the researcher managed the materials and the process to ensure that students could follow along effectively and purposefully. During the teaching color vocabulary, the researcher introduced the primary colors first and then proceeded to teach mixed colors through color mixing activities. This approach allowed the students can master the vocabulary they learned gradually and achieve good results.

2. Communicative Learning Process

During the learning process, the researcher always prioritized clear, step-by-step, and simple communication, because the students are still in the kindergarten level and require a clear and directed instructions for the learning process to run smoothly.

3. Positive Responses from Students

When the students directly involved in color mixing activities, positive responses were observed. They appeared curious and amazed with the color changes the made from color mixing activities. At the beginning of each lesson, many students asked which colors they would be mixing that day. This indicates that there were positive responses from students.

4. Good Learning Activities

During the learning process, when students were mixing colors, they were observed to be focused and enthusiastic. They enjoyed the activities with excitement and joy, indicating that the learning activities using the Discovery Learning Method in the classroom were effective.

5. Good Learning Outcomes

When the researcher finished teaching students about color vocabulary in Mandarin using Discovery Learning method, their learning outcomes improved compared to before. The average pre-test score was 11,53, and average post-test score increased to 98,07. In the implementation of the Discovery Learning method, the students' mastery color vocabulary was at 92.30%.

CONCLUSION

Conclusion

Based on the research findings and discussion, it can be concluded that:

1. The application of the Discovery Learning method has proven effective for Kindergarten A students at Kindergarten X in Surabaya in mastering color vocabulary in Mandarin. The students are able to identify colors according to the instructions and color images according to the labeled color vocabulary.
2. Besides effectively enhancing students' learning outcomes, this method is also stimulating and encourages students to engage in learning. This can be seen when they are involved in color mixing activities, they are eager to try it.
3. When using the Discovery Learning method, thorough preparation is necessary before implementation.

This includes preparing the lesson plans, organizing the tools and materials to be used, and practicing the activities beforehand before applying them to the students.

4. During the application process, clear and step-by-step guidance is necessary for students, especially at the kindergarten level, to ensure that color mixing activities proceed smoothly.

Suggestions

Based on the researcher's experience with using the Discovery Learning method, there are some suggestions that the researcher would like to offer, as follows:

1. Before implementing this method, the teachers are supposed to make preparations starting from the lesson plans, tools and materials. The teachers should try the color mixing beforehand before implementing to the students.
2. Before starting a coloring activity, the teacher should first check that students' colored pencils are complete and match the color vocabulary being taught. This ensures that students can color according to the color vocabulary listed on the coloring sheet.
3. The teacher should manage time effectively during the teaching process, including preparing tools and materials, conducting color mixing activities, and administering practice exercises to ensure everything runs smoothly.
4. When teaching the Discovery Learning method to kindergarten students, the teacher needs to provide clear, step-by-step instructions and use simple language to ensure that students understand easily and the Discovery Learning activities are conducted effectively.
5. When creating line-drawing test questions, the teacher should place the vocabulary section on the left and the image section on the right to help kindergarten students answer the questions more easily.

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