

# THE MANAGEMENT MODE EFFECTING READING PICTURE BOOKS FOR PRIMARY SCHOOL STUDENTS IN CASE OF ZHUHAI HIGH-TECH ZONE JINDING FIRST PRIMARY SCHOOL

Lu HE<sup>1</sup>

<sup>1</sup> Student-Master of Education Program in Educational Management Innovation,  
Pathumthani University, Thailand; 1950706088@qq.com

## ARTICLE HISTORY

**Received:** 28 July 2023

**Revised:** 16 August 2023

**Published:** 28 August 2023

## ABSTRACT

The objectives of this research were: 1) to study the level of management mode affecting reading picture books for primary school students, and 2) to study the management mode affecting reading picture books for primary school students in the case of Zhuhai High-tech Zone Jinding First Primary School. The population consisted of 4,486 students of Zhuhai High-tech Zone Jinding First Primary School. The sample size was 354 students and determined using Krejcie and Morgan's tables (Krejcie & Morgan, 1970). The instruments used in the study were a questionnaire with 5 rating scales. Statistics used for data analysis were frequency, percentage, mean, standard deviation, and Multiple Regression analysis statistics.

The research results revealed that: 1) the level of management mode affecting reading picture books for primary students as a whole was at much level. When considering each aspect from the highest to the lowest average, it found that 3 aspects were at a high level, namely students' interest in reading aspect, students' extracurricular reading time aspect, and students' extra curriculum reading volume aspect. 2) The comparative result of the management mode affecting reading picture books for primary school students in the case of Zhuhai High-tech Zone Jinding First Primary School, classified by genders, ages, and educational levels. People with different genders, ages, and educational levels showed no different opinions on the management mode affecting reading picture books for primary school students in the case of Zhuhai High-tech Zone Jinding First Primary School at the statistically significant level of .05.

**Keywords:** Picture Books, Reading, Primary School Students, Learning Management

**CITATION INFORMATION:** He, L. (2023). The Management Mode Effecting Reading Picture Books for Primary School Students in Case of Zhuhai High-Tech Zone Jinding First Primary School. *Procedia of Multidisciplinary Research*, 1(8), 14

## INTRODUCTION

Picture book is a clever combination of pictures and words of reading and teaching form. From the level of literature education analysis, picture book reading mode can present a distinct literary, social, fun, etc.: and from the aesthetic level analysis, picture book reading with basic expression form of diversity, the character image vividness, image content coordination: from the level of story structure analysis, it can effectively show the integrity of the story. This story plot of children's books in the form of picture book reading is simple and easy to understand, which is extremely suitable for primary school students to read, and can have a positive impact on the physical and mental development of primary school students, and also lay a basic reading foundation for primary school students' future study and life.

The public's understanding of picture book reading is limited to wonderful pictures, clever picture book stories, exquisite design, beautiful printing and so on. Through reading picture books, teenagers and children can continue to carry out emotional experience. Through reading picture books, their emotions can be improved and improved to a certain extent. Children can feel good emotions in advance when they relax and happy mood. Reading picture books can also vividly reflect the joys and sorrows of the characters in the story in the book, and at the same time experience the inner emotions of the characters, so as to gain knowledge and wisdom. On the other hand, children can take the kind heart and cognitive way of the characters in the story, laying a foundation for their emotional behavior.

Picture book reading is a summary of knowledge and culture and rich experience. Picture books have a unique style and creative design, so they are deeply loved by the majority of young readers. The reading content of picture books is creative, vivid, and interesting, which can satisfy the curiosity of teenagers and children, and can also easily bring young readers to the ocean of knowledge. The diversity of picture books can convey positive energy in the form of encouragement, and can also be discussed in depth in the way of stories to help children

The cultivation of their own conduct and emotions. Picture book reading course is different from ordinary Chinese teaching to a certain extent, China's general Chinese teaching is after years of change and update,

The rigorous formed system, while picture book reading teaching is the new generation of teaching, lacks of the theoretical system and practical experience. Although, the current domestic and foreign scholars for picture book education basic theory level of research is more, based on the picture books applied in primary school research is not many, this leads to the domestic primary school applying picture books reading education is difficult, due to the lag of related guidance system, the school has no specific guidance plan. In the management, there are many unreasonable points in the actual teaching process: Some teachers use picture books as auxiliary tools for reading and literacy in teaching, and transmit this view to students: Some students only regard picture books as simple story books, and do not deeply realize the actual value of picture books. How to maximize the role of picture book resources? How to carry out picture book reading education efficiently? This is the primary school teaching reform must think about Test and the face of the problem.

## LITERATURE REVIEWS

The concept of picture book reading is the process in which the reading subject affects the content of the picture book. Picture book reading can indirectly reflect the practical activities and spiritual activities of the reading subject. The reading content of the picture books is text and pictures, among which the pictures occupy the majority of the information. In the actual reading process, students have weak reading ability, so in most cases, they use the auxiliary function of the pictures to understand the plot. In a strict sense, reading picture books is not exactly equivalent to looking at pictures. Chinese teaching scholars Gao Shenying and Liu Lianghua (2004) mentioned in detail in their article "Effective Teaching Theory": Generally

speaking, the pictures in picture books mainly come in two forms of expression, one is mapping. With the help of specific pictures to indirectly reflect specific things: second, schematic. Add meaningful pictures to the picture book to convey certain emotions and thoughts, etc.

Therefore, the reading of picture books is not only for the reading of picture mapping, but also for the schematic function of the reading subject with the help of the role of pictures, and skillfully develops the content in the picture book into a process of information transformation of readers' personal subjective thoughts.

Learning the management mode, in the beginning, the term learning management was mainly aimed at the development of information technology. At that time, the development of information technology abroad presented a chaotic situation. Foreign scholars put forward learning management in order to effectively conduct standardized management of information technology. As the time goes by. The field of learning management theory design is gradually expanding. Many researchers have carried out in-depth research and analysis of learning management accordingly, and have proposed the implementation of learning management mode based on the premise of informatization. Some scholars say that learning management can effectively enhance the effect of information learning, but also improve the work efficiency of regulatory departments and organizational departments. The emergence of computer science and technology has caused tremendous changes in the teaching mode in China, and network learning has obviously become mutual. One of the mainstream of the teaching mode in the Internet era. With the continuous development of this teaching mode, a novel concept—"learner control" is gradually spread in the society. The basic characteristic of network learning is that learners can completely control the right of learning by themselves, and they can also customize their own learning activities according to their own actual situation and needs. The learner control mode can not only effectively improve the learning interest of the learning subject, cultivate the learning subject to develop the good habit of conscious and active learning, but also improve the learning motivation of the learners. Some foreign scholars also said that "learner control" is one of the most effective ways to realize students' independent learning in network learning management.

And learning the concept of the management mode is based on the concept of learning elementary school class model research, it is different from ever from the perspective of sociology or management research, paper will study the concept as a theoretical basis to make two kinds of research perspective, play a cooperative learning in focus on students motivation play students' subject consciousness, form a team competition, target motivation, such as practice, promote the students' interpersonal relationship, cooperation consciousness, independent participation<sup>1</sup>. International research. Picture books first emerged in Western countries in 1655. In 1658, Italian education experts took the lead in publishing Children's Painting, which is jointly recognized as the earliest children's book with pictures by scholars from all over the world. In Asia, the development of picture books in Japan was relatively early. It was officially launched in the 1960s, but in 1972, the reading of picture books developed very fast in China. As for China, it first started Taiwan contact picture books in 1964 and gradually got on the right track in 1984. As far as mainland China is concerned, the development progress of picture books is still in the early stage of development. Foreign scholars have studied this field relatively early, and most of the scholars focus on the importance of children's reading. Now the author will make a brief introduction to this research of foreign scholars:

Bruno, T. L. K. Scholars (2012), said when parents tell children a story, the story is not just a simple story, but children create an imaginary environment, let the children in it, the teaching model can bring infinite possibilities to children's future life, in the process, the parents act as a role is enlightenment.

Krishnan, T. N. (2012) Through a long period of research and investigation, it is concluded that for a two-year-old child, half of the words he can use are from picture books, which can fully reflect the role of picture book education for primary school students in the initial teaching process is still very effective.

According to the results of the research and analysis of Bruno (2012) and other scholars, it said that parents usually use books with illustrations to educate their children, and also use a variety of auxiliary methods, such as reading questions, guidance and other methods to improve the language expression ability of primary school students.

Krishnan, N. T. (2012) believes that the emergence of reading and words should be synchronized, and when human beings invented words, reading activities will then appear.

Raj Kishen Moloo with Kavi Kumar Khedo (2018), the basic concept of reading is defined into two kinds: one is to emphasize the process of reading, and the second is to emphasize the meaning of reading. Both say that the content can be read not only in a single text, but also in other forms of content, such as drawings, illustrations, and data sheets. Gibson, it is believed that the current public has a greater understanding of reading.

Zhang Zhuo (2013) is mainly set the age of the research object for seven and eighth-grade students, the students in the age of picture book reading course in-depth observation analysis, said the teacher properly traction, guidance can effectively help students improve reading ability, but reading the activity should be guided by the children's personal subjective will, and interest is the key factor affecting whether children are willing to read.

Ji Guilan (2014) found that for children reading picture books, the content of picture books should be designed from the perspective of children. At best, the content in the picture books can effectively highlight the art of reading and give full play to the basic concept of reading picture books to the greatest extent.

Shen Jingwen (2016) once defined reading as reading in reading teaching: Reading can clearly understand, understand and apply the whole process, which is also an indispensable part of modern people's life, and is a way and means for people to learn". According to the above description, reading is a process in which readers master knowledge through words, information, and pictures. Turn the relevant material into the content, so that you can understand it deeply.

According to the relevant research literature collected, Foreign scholars also have some research on the learning management of picture book reading, In the 1980s, Foreign scholar Richard K has begun to do a lot of in-depth research and analysis on the impact of picture book reading on the socialization of primary school students, The two people develop the content of the picture book by choosing targeted social behaviors, And with nearly 100 primary school students for frequent communication and experiments, A deep understanding of children's subjective thoughts, Based on this analysis of children's reading problems, He said that children should be guided by classroom activities when reading picture books. This way can effectively help children tend to develop social development.

Jaksa Kivela and Ruth Jeanine Kivela (2004) believe that what picture book teaching wants to convey is not only a shallow story plot but also to indirectly convey all kinds of emotional experience, thoughts and feelings, and life principles to the reading subject through the form of the story, and to teach children to understand all kinds of life truths through this way of teaching and fun. At the same time, is the content of the picture books, picture the basic idea is not mandatory content to pupils, it is with the help of novel story content and exquisite pictures effectively attracts pupils, gives pupils can initiative to read, and then under the guidance of parents traction, subtly develop the good habit of love reading. Through the survey, they found that children between the ages of three and eight are an important period for the development of reading ability, and the Chinese teaching of the first grade to the third grade is an important stage to lay a solid foundation for their future lifelong reading. Reading education for children

should not only make children love reading but also help children gradually develop good reading habits, from which to truly feel the happiness of reading.

Percia, V. (2013) believes that picture book reading can also play a good role in the imagination development of primary school students. Picture books are the first kind of books that primary school students have contact with, and they are also the most important books that primary school students are exposed to in their reading career. Whether children can feel happy from reading picture books often affects whether they can develop good reading habits in the future, and the behavior and thinking mode of children will have a huge impact on their future development. And the quality of picture books determines the quality of children's imagination. Yue Juan (2011) through the research analysis of domestic freshmen found that scientific and reasonable management of picture books reading learning, can effectively enhance the feelings between teachers and students, improves students' interest in reading, increases the opportunity to interaction between students and teachers, but also can skillfully strengthen students' communication ability to communicate with others.

Xi Guanglei (2014) studied and analyzed the reading of picture books of primary school students by the action research method, and the effect of this analysis method is relatively more efficient in practice. In the actual process of developing picture book reading, Houhai Primary School mainly studied and designed the development mode of picture book reading courses by means of action research, and took the corresponding research results, which effectively promoted the development of picture book reading in the school.

Zhang Libo (2015) According to the analysis, the scientific management mode of picture book reading can effectively promote the comprehensive development of primary school students. For example, accelerating the personality development of primary school students, cultivating their thirst for knowledge, the ability to live independently, forming basic habits, and so on, these are the basic purposes of picture book reading.

Tan Junqin (2017) conducted a three-month research survey on primary school students with the help of the action research method and found that reading the appropriate picture books can effectively improve students' emotions and improve their ability. But the child to overcome obstacles, express their own views, respect for others and other aspects of the effect is not very ideal.

## **RESEARCH METHODOLOGY**

### **The Population / the Sample Group**

The Population 4,486 students from the Zhuhai High-tech Zone Jinding First Primary School Sample Group. The sample group is students in Zhuhai High-tech Zone Jinding First Primary School, Guangdong, China. The sample size used in this questionnaire was determined using Krejcie and Morgan's (Krejcie & Morgan, 1970) tables using purposive and simple random sampling. The sample size is 354 samples.

### **Research Instruments**

- 1) "Timers", "encouragement cards", these props are mainly used to manage classroom discipline;
- 2) "Picture book reading achievement book", Record the reading effect of picture books, and record the achievements of each reading class;
- 3) "Corresponding media devices", such as video and audio devices for playing video;
- 4) "Reading diary", In the reading diary, students record their subjective feelings in the form of a diary after reading picture books every day;
- 5) "Questionnaire and student interview" uses the data of the questionnaire and interview to

### **Research Implementation**

The action study is detailed in the following steps:

1) Set up a reading group. Take the students in Class 1, Grade 3 as an example, they are divided into 8 reading groups according to the number of students in the class. During the reading period of the picture books, each group should select a group leader and the group picture book administrator, and collect the materials under their organization and leadership. For the team members, it can not only improve the enthusiasm and unity consciousness of the students but also lay a good foundation for the students to read the picture books later.

2) Stage evaluation. In the mid-term and final periods, the class conducted a picture book reading evaluation activities, mainly summarizing the reading content of each stage.

3) Home-school union. Classroom picture book reading and extracurricular reading activities, not only can benefit children, but also facilitate the parents, parents' meetings, advocate parents' drive, reading, watching and reading excellent student works, at the same time invite picture book teaching expert lectures, through a comprehensive understanding, make parents and children participate in picture books to read. When reading picture books, students are required to choose the picture books recommended by education departments or teachers to read the whole book.

4) The design of teaching strategies for picture book reading, The first step should be to complete the design of teaching objectives, classify the teaching objectives of the design and rank them according to their importance and relevance; the second step is to clarify the output, evaluation, and practice tracking; to determine the teaching content and participants in the teaching process of picture book reading; the fourth step is to refine the objectives of picture book reading and reasonably them to each course; the fifth step is to check the teaching strategies and select the appropriate media auxiliary teaching.

#### **Data Collection**

1) Teacher interview questionnaire

2) Questionnaire on the reading situation of picture books for primary school students

3) Primary school students' picture book reading and learning management teacher questionnaire

4) Primary school students' reading status of picture books

#### **Data Analysis and Statistics**

A formative evaluation was adopted in the implementation process of the teaching program: It is a process used by the picture book resource design staff to collect the feedback information and to rectify and improve the current content of the picture books strictly according to the feedback information. Its main purpose is to continuously optimize picture books, improve teaching efficiency, and strengthen the reading effect. The most important thing in the whole process is the collection and screening of various information. The formative evaluation of picture book reading can be roughly divided into three stages:

In the first stage: evaluate independent individuals in the class and collect feedback information from reading picture books; in the second stage, a group is evaluated, and on this basis, the group evaluation is conducted. Through the differences between team members and retrograde analysis, the final analysis results are collected and recorded; In the third stage: conduct the field experiment in the class, the teacher directly observes to collect the data, and complete the evaluation work on the spot.

## **RESEARCH RESULTS**

### **Symbol and Abbreviations**

N : Questionnaire reliability

R : analysis of validity

X : content validity

Y : Structure validity

$$R = \frac{N \sum XY - \sum X \cdot \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \cdot \sqrt{N \sum Y^2 - (\sum Y)^2}}$$

$\sum XY$  : Is the sum of the product of pairwise observations of two variables

$\sum X$  : Is the sum of all observations of the X variables

$\sum Y$  : Is the sum of all observations of the variable Y

### Presentation of Data Analysis

#### 1) Questionnaire design and survey process

From September to October 2017, the author issued the Questionnaire on Reading Picture Books for Primary School Students in Ganzhou Binjiang No.1 Primary School. After the test, we took it back. We issued a total of 1,000 questionnaires and made statistics on the data.

#### 2) Questionnaire reliability and validity test

In order to effectively ensure that the questionnaire is true and effective. In the process of writing this paper, we specially seek several tutors to study and judge them. For example, in Table 1, the questionnaire reliability and validity analysis of the survey results of picture book problems in Binjiang No.1 Primary School in Ganzhou City.

#### 3. Statistics of survey respondents and valid questionnaires

The data collected from the questionnaire survey was sorted out, and 1,000 questionnaires were put out, and the information was recovered.

### Results of Data Analysis

**Table 1** Questionnaire validity evaluation of reading picture books of Jinding No.1 Primary School in Zhuhai High-tech Zone Condition (N = 5)

Class	Very High	Higher	Same as	Relatively Low	Very Low
Content Validity	2	2	1	0	0
Structure Validity	3	1	1	0	0

In addition, in order to ensure the authenticity and accuracy of the questionnaire survey, the content and credit degree of the questionnaire should be checked by sample samples, and the survey results should be calculated according to the repeated survey method. The specific calculation formula is as follows:

N : Questionnaire reliability

R : Analysis of validity

X : Content validity

Y : Structure validity

$\sum XY$  : is the sum of the product of pairwise observations of two variables

$\sum X$  : is the sum of all observations of the X variables

$\sum Y$  : is the sum of all observations of the variable Y

According to the correlation coefficient of the two measurements, it is concluded that the value of the picture book questionnaire of Jinding No.1 Primary School in Zhuhai High-tech Zone is 0.8584, which reaches the reliability coefficient standard of the questionnaire, indicating that the credibility is still very high. Statistics of survey respondents and valid questionnaire data collected from the questionnaire survey were sorted out, with 354 questionnaires released, and the specific recovery situation is as follows: Table 2-4:

**Table 2** Statistical table for the reading questionnaire of primary school students

Total questionnaire	354
Valid questionnaire	302
Invalid questionnaire	52

**Table 3** Statistical table for teachers of primary school students

Total questionnaire	354
Valid questionnaire	333
Invalid questionnaire	21

**Table 4** Statistical tables of parents' questionnaires for primary school students

Total questionnaire	354
Valid questionnaire	290
Invalid questionnaire	64

## DISCUSSION & CONCLUSION

Picture book reading learning for primary school students still needs to be continuously permeated into routine teaching to be applied. Its feasibility needs the support of families, schools, and relevant decision-making departments, but this study is difficult to be fully implemented. I only hope that the radiation influence of the learning management mode can make more children enjoy the beauty of reading picture books. Secondly, there is only one semester for case teaching practice, and in a short time, it is difficult to reflect on the application effect of this management mode. We should lengthen the time and expand the practice scope, and we will continue to pay attention to it in the future.

### Conclusion

1) Build the primary school students' reading steps. Because the content of the picture book is full of tong qu, transmission, and influence, so, rich students' picture book reading materials can efficiently enhance the students' imagination, aesthetic ability, and thinking ability, and the comprehensive promotion of these abilities can effectively strengthen the student's reading ability but also lay the foundation for the student's writing ability. Reading and thinking at the same time can effectively help students to go deep into the story plot of the picture book so that students can gain more fruitful results in the process of reading. In the process of collision the thought plot and personal views that the author wants to convey, I constantly improve my abilities in reading, understanding, and vocabulary.

2) Give full play to the pupil's reading imagination Stimulate the imagination of pupils with the help of imaginative pictures. Children's imagination is not fabricated out of thin air, it is based on their information to associate, and through the association of the information have mastered the reprocessing, combination to create a new image. Although the child has a certain life experience, its thinking mode is not fixed, and will not be affected by external factors, so, primary school students often appear as a whimsical phenomenon, this is valuable. To skillfully enrich children's knowledge accumulation in daily life, this is because when their knowledge storage is more, the range of their imagination will be wider, and the imagination content will be more.

3) Picture book reading classification guidance. Different students' interests and hobbies will also show different differences. Therefore, in the process of actual guidance, teachers should investigate every student in the class clearly, to develop a variety of picture book guidance programs to consider the influence of the differences in students' interests.

At present, there are roughly the following picture books in China:

1) Knowledge and experience of picture books, such picture books can effectively expand students' knowledge. Usually, teachers can teach by listing or comparing knowledge and methods. The main purpose of teachers' choosing knowledge and experience books is to expand students' knowledge, and at the same time strengthen students' understanding of vocabulary, and narrow the gap between the original knowledge and the knowledge mastered by children.

2) Appreciation of picture books, Appreciation can play an effective role in restraining and reflecting on literary creation. The creators should consider the subjective interest of primary



school students, collect the opinions of primary school students, and base them on the actual creation.

3) The bias towards strategy teaching picture books, As far as strategy teaching is concerned, teachers should pay attention to students 'reading dynamics, and formulate scientific and reasonable teaching strategies according to the actual situation of students' reading.

4) Biases to understand the picture books, at present, the teaching of students in the course of drawing and text is composed of pictures and texts. The picture in the drawing text is a description of the surface phenomenon of the basic things, while the drawing text is a record of the actual situation. Looking at the detailed information of the pictures in the text is conducive to promoting students to understand the information content of the text, making the pictures become the motivation to guide students to learn independently. At the same time, the content in the textbook can promote students to deepen their understanding of the content and materials of the textbook. Therefore, it is not ignored in the process of children's learning.

## REFERENCES

- Albutus hu. (2022). Study on teaching strategies of primary school Chinese. *Scientific Consultation (Educational Research)*, (11).
- Bruno, F. B., Silva, T. L. K., Silva, R. P., & Teixeira, F. G. (2012). Web-based learning design tool. *Campus-Wide Information Systems*, 29(4).
- Fu Wenyan. (2022). Analysis of the teaching strategy of Chinese group text reading in primary schools. *Journal of Chifeng University (Chinese Philosophy and Social Sciences Edition)*, (02).
- Jaka Kivela, & Ruth Jeanine Kivela. (2004). Student perceptions of an embedded problem-based learning instructional approach in a hospitality undergraduate programme. *International Journal of Hospitality Management*, 24(3).
- Krishnan, T. N. (2012). An exploratory study on executive management education through technology mediated distance learning in India. *Industrial and Commercial Training*, 44(7).
- Li Yanhong, & Zhou Xueying. (2021). Research on the current situation and countermeasures of primary school Chinese teaching. *Neijiang Technology*, (02).
- Li Yueping, Chen Xiumei, & Li Jiasong. (2020). A preliminary study on the teaching mode. *Science, Education and Culture (China)*, (02).
- Liu Genglian. (2022). Exploration on the cultivation of Chinese independent reading ability in primary schools from the perspective of famous books. *Scientific Consultation (Educational Research)*, (02).
- Percia, V., & Secreto. (2013). Gender Equality in Online Learning: The Case of up Open University. *Procedia-Social and Behavioral Sciences*, 103.
- Qi Jianfang. (2021). Teaching practice and thinking of "group text reading" in primary school Chinese. *Journal of Tianshui Normal College*, (08).
- Raj Kishen Moloo, Kavi Kumar Khedo, & Tadinada Venkata Prabhakar. (2018). Critical evaluation of existing audio learning systems using a proposed TOL model. *Computers& : Education*, 117.
- Richard, K., & Ladyshevsky, Ross Taplin. (2013). Factors influencing mode of study preferences in post-graduate business students. *International Journal of Management Education*, 11(1).
- Wang Donglan. (2019). Primary school Chinese whole book reading teaching strategy. *Quality education in the west*, (23).
- Wen-Long Chang, & Chun-Yi Lee. (2013). Virtual team e-leadership: The effects of leadership style and conflict management mode on the online learning performance of students in a business-planning course. *British Journal of Educational Technology*, 44(6).

- Yi Wenjuan. (2021). On the construction of primary school Chinese “pleasant reading” classroom. *Data*, (Z1).
- Zhu Fengjie. (2019). Exploration of the teaching methods of primary school Chinese theme reading. *Quality education in the west*, (27).
- Zhu Yu. (2021). Discuss the teaching practice of combining reading and writing of Chinese group text in primary schools. *Huaxia Teacher*, (11).

**Data Availability Statement:** The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

**Conflicts of Interest:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

**Publisher’s Note:** All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.



**Copyright:** © 2023 by the authors. This is a fully open-access article distributed under the terms of the Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0).