The Construction of the Chinese Character Knowledge System in the Lower Grades of Primary School by the "Six Categories of Chinese Characters" Theory—Take Primary School Chinese Unified Edition First-grade Textbook for Example

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Abstract. Literacy is the foundation of reading and writing, the basis for mastering knowledge, cultivating abilities and conducting various subject teaching, and it is also an important prerequisite for cultivating and enhancing students' comprehensive Chinese literacy. Based on the "Six Categories of Chinese Characters" theory, taking the first-grade unified textbooks as the entry point and combining the current situation of first-grade character recognition teaching, this paper explores and studies the curriculum functions and specific practices of the "Six Categories of Chinese Characters" theory in character recognition teaching in the lower grades of primary school Chinese, and clarifies the specific teaching strategies for the four types of Chinese characters, namely Pictographic characters, Indicative characters, Assembled Ideogram, Phonetic Compound, in the first-grade unified textbooks. In the specific teaching of Chinese character recognition, these four types of Chinese characters can be taught respectively by adopting strategies such as traceability and comparison,correlation and deconstruction,split and reorganize, analysis and combined use. Through this method, students can build a knowledge system of Chinese characters based on their principles.

Keywords: Lower Grades of Primary School Chinese, Literacy Teaching, The Principles of Chinese Characters, The "Six Categories of Chinese Characters" Theory

1. Introduction

Language and characters are the most important communication tools and information carriers in human society and an important part of human culture. The development of Chinese characters has a history of several thousand years. Hao Wenhua categorized Chinese character literacy teaching methods based on whether they emphasize the relationship between a character's form and meaning. These include: The Character Etymology-Based Approach – focuses on the internal structure of characters, The Morphology-Based Approach– prioritizes the external features of characters and The Integrated Approach – combines both internal and external structural analysis [1]. The Character

Etymology-Based Approach is based on the traditional "Six Categories of Chinese Characters" theory and designs teaching methods according to the internal structure of Chinese characters to carry out character recognition teaching. Many experts believe that under the theoretical guidance of the traditional "Six Categories of Chinese Characters" theory, it is completely feasible and highly effective to carry out character recognition teaching in combination with the characteristics of Chinese characters. But at the same time, there are still some problems in the first-grade primary school character recognition teaching based on the "Six Categories of Chinese Characters" theory that need to be overcome and solved urgently. Huo Shengyu proposed that there are two major problems in character recognition teaching based on the "Six Categories of Chinese Characters" theory. The first one is the objective conditions such as talents, technology and equipment. The second is whether teachers can correctly handle the evolution of Chinese character forms and the development of their meanings [2]. Chen Yizhu and Fu Yashu hold that each character-creating method in the "Six Categories of Chinese Characters" theory has its own difficulties in the application of Chinese character teaching. The theory of the "Six Categories of Chinese Characters" covers a wide range and is profound in content, which is a test for teachers engaged in Chinese character teaching [3].

By consulting relevant literature, it is found that previous studies have mostly pointed out the concepts, suggestions and strategies of applying the "Six Categories of Chinese Characters" theory in primary school character recognition teaching, lacking specific and highly practical character recognition teaching methods tailored to the characteristics of different types of Chinese characters. Therefore, based on the theory, this paper takes the unified textbooks for the first grade as the entry point, combines the current situation of character recognition teaching in the first grade, and focuses on discussing the teaching methods for different types of Chinese characters in the unified textbooks for the first grade, thereby optimizing the teaching strategies and improving the teaching efficiency.

2. "Six Categories of Chinese Characters" theory

"Six Categories of Chinese Characters" first appeared in Zhou Li·Di Guan·Bao Shi. The book states that the Bao Official is in charge of admonishing the king against his faults. To nurture the sons of the state with virtue, they were taught the Six Arts:the Five Rites, the Six Music forms, the Five Archery skills, the Five Charioteering techniques, the Six Categories of Chinese Characters, and the Nine Mathematical methods [4]. During the Eastern Han Dynasty, the historian Ban Gu first listed the content of the "Six Categories of Chinese Characters". The HanShu·YiWenZhi states, "In ancient times, students entered primary school at the age of eight and were taught the 'Six Categories of Chinese Characters': Pictographic Characters, Xiang Shi, Xiang Yi, Xiang Sheng, Zhuan Zhu, Jia Jie,these are the foundation of character creation [5]. Zheng Zhong annotated Zhou Li·Di Guan·Bao Shi to explain the "Six Categories of Chinese Characters" for Pictographic Characters, Assembled Ideogram, Zhuan Zhu, Chu Shi, Jia Jie, Xie Sheng [6]. Xu Shen's Shuowen Jiezi of the Eastern Han Dynasty made a systematic analysis of the "Six Categories of Chinese Characters" issue. The names and sequences of the " Six Categories of Chinese Characters" referred to are respectively:Indicative characters, Pictographic characters , Phonetic Compound, Assembled Ideogram, Zhuan Zhu, Jia Jie [7]. For nearly two thousand years since the Eastern Han Dynasty, people generally adopted the names determined by Xu Shen and the sequence listed by Ban Gu, understanding the "Six Categories of Chinese Characters" theory as: Pictographic characters, Indicative characters, Assembled Ideogram, Phonetic Compound, Zhuan Zhu, Jia Jie. As an early theory in China to explain the structural principles of Chinese characters, the "Six Categories of Chinese Characters"

Theory scientifically and systematically reveals the general laws of Chinese character creation and has made significant contributions to the study of the history of Chinese characters.

3. The importance of literacy teaching in the lower grades of primary school

Literacy teaching is the cornerstone of primary school Chinese education and the core task of lower grade Chinese learning. Literacy, as the starting point of language ability development, plays a crucial role in the inheritance of culture, the improvement of reading and writing skills, and the formation of Chinese language literacy.

Literacy is the foundation of language ability development and plays a significant role in children's cognitive abilities and social development. Li Jilin pointed out that the lower grades of primary school are a sensitive period for children's language development. Literacy teaching during this period can effectively promote the accumulation of children's vocabulary, the improvement of language expression and thinking ability [8]. Literacy is also the core starting point of reading and writing ability. Cui Luan pointed out that insufficient literacy can lead to "dyslexia", which not only affects reading comprehension but also restricts the formation of written expression ability [9]. In addition, character recognition teaching is of vital importance to the cultivation of comprehensive language literacy. It not only involves the discrimination of character shapes, pronunciations and meanings, but also can cultivate students' aesthetic ability and thinking quality through the structural beauty and rhythmic beauty of Chinese characters, thereby comprehensively improving Chinese language literacy.

Literacy education is not only the foundation of Chinese language learning, but also a key link in promoting China's fine traditional culture and cultivating a sense of national identity. Xu Jialu's research shows that the character "孝 (filial piety)" embodies traditional ethics, while the character "和 (harmony)" reflects the concept of harmony in Chinese culture [10]. Wang Rongsheng pointed out that as a common symbol of the Chinese nation, systematic teaching of Chinese characters can enhance cultural confidence and improve the sense of identity with Chinese culture [11].

4. Problems existing in the teaching of character recognition in the lower grades of primary school

4.1. The methods of literacy are monotonous, and the literacy classes are mechanical and inflexible

Lin Xili mentioned that Chinese people have been teaching Chinese characters mechanically from primary school to university [12]. The singularity and mechanical nature of character recognition methods are prominent problems commonly existing in lower-grade character recognition teaching. The new first-grade Chinese textbook of the unified edition is rich in character recognition content and suitable for diversified teaching. However, in teaching, many teachers often adopt the method of counting strokes, replacing or adding or subtracting stroke components to teach Chinese characters, and the character recognition method is relatively single and mechanical.

4.2. The learning of the meanings of Chinese characters has not received sufficient attention

Most teachers do not pay attention to explaining the formation principles of Chinese characters in the process of character recognition teaching. They often have students memorize the structure of characters through repeated reading, copying, and card recognition, neglecting the connection among the three elements of Chinese characters - phonetics, structure, and meanings. The

explanation of character meanings is relatively weak, and the learning of the meanings of Chinese characters has not received sufficient attention.

4.3. The process of literacy teaching lacks cultural infiltration

Chinese characters are the living fossils of Chinese civilization, and behind each character lies an extremely rich cultural connotation. However, many teachers are obsessed with mechanical training in stroke sequence and neglect to instill traditional culture and Chinese character culture into students. This teaching method separates characters from culture, resulting in the loss of the cultural inheritance value of Chinese characters.

5. The curriculum function of the "Six Categories of Chinese Characters" theory in character recognition teaching

5.1. Stimulate learning interest and enhance visual memory

Pictographic characters and Indicative characters have distinct pictorial features and are highly suitable for literacy teaching in lower grades. Teachers can help students establish the connection between the structures and meanings of Chinese characters by demonstrating their evolution process. For instance, when learning the character for "山(mountain)", showing its pictographic form can help students understand the meaning of the character more intuitively and remember it more deeply. This visualized teaching method is particularly suitable for children and beginners of Chinese characters, and can effectively stimulate their interest in learning.

5.2. Reveal the rules of Chinese characters and improve the efficiency of character recognition

The theory of the "Six Categories of Chinese Characters" reveals the construction rules of Chinese characters. Teachers can guide students to understand the meaning and pronunciation of characters by analyzing the structure. For instance, Phonetic Compound account for over 80% of modern Chinese characters. Once students master the rules of radicals and phonetic components, they can quickly infer the meanings and pronunciations of unfamiliar characters. For instance, "清(clear)", "晴(sunny)" and "请(please)" all have the phonetic component "青(cyan)", but they have different radicals and are respectively related to water, the sun and speech. Assembled Ideogram express new meanings by combining their meanings. For example, the character "信(honesty)" is composed of the character "言(speech)" and "人(person)", it indicates that one should be honest when speaking. This kind of analysis helps students shift from mechanical memory to comprehension memory and improve the efficiency of character recognition.

5.3. Cultivate Chinese character thinking and deepen cultural understanding

Wang Ning pointed out that the vocabulary in language and its meaning system describe various cultural phenomena and thus become the carriers of culture [13]. The Chinese characters composed of it have thus become the carrier of Chinese culture. Lang Wenjie pointed out that the class is an important venue for students to learn about Chinese characters and appreciate their beauty [14]. The theory of the "Six Categories of Chinese Characters" is not only knowledge of Chinese characters but also carries traditional Chinese culture. By explaining the structure of Chinese characters, teachers can guide students to think about the logic and way of thinking of the ancients in creating characters.

6. The specific practice of the "Six Categories of Chinese Characters" theory in character recognition teaching

Based on the character creation methods of the Pictographic characters, Indicative characters, Assembled Ideogram, Phonetic Compound in the traditional "Six Categories of Chinese Characters" theory, the author classified the 300 new characters collected in the "Character Recognition Table" of the first volume of the unified primary school Chinese textbook.

Statistics show that the Chinese characters in the first grade of the unified edition can be classified into five types: Pictographic characters, Indicative characters, Assembled Ideogram, Phonetic Compound and both Assembled Ideogram and Phonetic Compound. The "久 (For a long time)" and "前(Ahead)" methods of character creation cannot be accurately summarized through the traditional classification of the "Six Categories of Chinese Characters" Theory. There are a total of 83 Pictographic characters, accounting for 27.7%. There are 16 Indicative characters, accounting for 5.3%. There are 92 Assembled Ideogram, accounting for 30.7%. There are 104 Phonetic Compound, accounting for 34.7%. Three both Assembled Ideogram and Phonetic Compound, accounting for 1%.

6.1. Pictographic characters: traceability and comparison

Traceability. Traceability refers to briefly and concisely explaining to students the general development process of the emergence and evolution of Chinese characters through methods such as showing physical objects or presenting pictures, demonstrating actions or telling stories. This is the foundation for introducing the "Six Categories of Chinese Characters" into the literacy class for teaching. Any analysis of the formation principles of Chinese characters is based on the tracing the origin of the characters.

Generally, the teaching of tracing the origin of Chinese characters is carried out in the order of "physical object color paintings (physical objects) →generalized abstract pictures →ancient characters (usually small seal script) →regular script" according to the generation and development of Chinese characters. However, after thousands of years of development and evolution, Chinese characters have become highly abstract and purely written symbols. Therefore, in character recognition classes, teachers must use ancient characters with a high degree of pictographic representation as a bridge to help students analyze Chinese characters and understand the process by which Chinese characters evolved from pictures to simplified regular script.

Comparison. Comparison refers to the process of comparing the abstract images of new characters, ancient Chinese characters and regular script characters after presenting pictures, physical objects or demonstrations. "Comparison" is basically carried out simultaneously with Traceability of Chinese characters. During the teaching process, teachers should pay attention to guiding students to perceive the changes and constants during the development of Chinese characters from the oracle bone script to regular script, so as to help learners meaningfully remember the structure and meaning of the characters they have learned. For instance, when teaching the character for "鱼(fish)", first show the oracle bone script and bronze script of the character for "鱼(fish)" , then show the small seal script of the character for "鱼(fish)" , and then compare the oracle bone script and bronze script with the seal script. Students will find that there are many similarities between them. At this point, the teacher should introduce the regular script character for "鱼(fish)". At this time, students will notice that the line at the top of the ancient Chinese character for "鱼(fish)", which represents the fish head, has not changed. The middle line representing the fish body has transformed into the "田(field)" , while the lower line indicating the

fish tail has changed into the "一(one)" . In this way, the character for "鱼(fish)" in students' minds is a tangible image of a "鱼(fish)" rather than just an abstract line or stroke.

6.2. Indicative characters: correlation and deconstruction

Correlation. The theory of Correlation emphasizes the systematic connection of knowledge within the cognitive structure. In the teaching of indicative characters, it is necessary to activate learners' deep association between abstract symbols and the concepts they refer to. The first step is to make the association between structure and meaning explicit. The essence of the construction of Indicative characters lies in pointing to non-concrete concepts through the "marking nature" of visual symbols. In teaching, it is necessary to strip away the concrete dependence of pictographic characters and highlight the abstract ideational function of symbols. By analyzing the topological features of symbols (such as position, direction, and superposition relationship), learners are guided to establish direct connections between non-concrete forms like lines and strokes and conceptual categories (such as the spatial relationship between "上(above)" and "下(below)"), forming a cognitive schema of structure and meaning mapping. The second is the hierarchical connection of the symbol system. Indicative characters do not exist in isolation; their symbolic systems have a genealogical connection with character construction methods such as Pictographic characters and Assembled Ideogram. In teaching, it is necessary to construct the derivative context of the Chinese character family. For instance, demonstrate how the indicative symbols serve as components in the formation of compound characters such as the short horizontal line in "本(origin)" marking the root of a tree, enabling learners to understand the productivity of the indicative method and its pivotal role in the Chinese character system.

Deconstruction. Deconstructionism advocates breaking the closed nature of structure. The teaching of Indicative characters needs to reveal the dynamic nature of their ideographic mechanisms through the decomposition and reconstruction of symbols. The first step is the deconstructive disassembly of symbolic marks. The core of indicative characters lies in the activation of the meaning of the basic components by the "marking". In teaching, it is necessary to separate basic components such as the pictographic character "木(wood)" from indicative marks such as short horizontal bars. By comparing the presence or absence of marks and their positional changes such as "末(end)" and "本(origin)", the "indicative" function of deconstructive symbols enabling learners to realize that marks are not added randomly but are an inevitable choice for the externalization of concepts. The second is generative reconstruction of script dynamics. The visual representation of indicative symbols relies on dynamic elements such as brushwork and proportion during the writing process. By breaking down the stroke order (such as the closure of the mouth in "甘(sweet)" and the embedding sequence of the short horizontal strokes), and analyzing the temporal logic of symbol generation, learners can understand the procedural meaning construction of Indicative characters rather than static graphic recognition.

Effective teaching of Indicative characters requires the synergy of Correlation and deconstruction: The Correlation theory constructs the meaning network of symbols, while the deconstruction method breaks the established cognition and promotes the recreation of symbols. Teachers should guide learners to discover connections in deconstruction and reflect on deconstruction in connections, forming a spiral cognitive cycle of "analysis - integration - reanalysis".

6.3. Assembled Ideogram: split and reorganize

The essence of Assembled Ideogram is the integration of meanings among different components of the characters. The general model of "Split and Reorganize" is as follows: Firstly, based on the principles of Chinese character formation, the Assembled Ideogram is split into multiple components, and the meanings of each component are understood respectively. Secondly, they are recombined to understand the overall meaning of the character. The process of reorganization is a process of guiding students to think, which is the key and difficult point in mastering the Assembled Ideogram. For instance, when teaching the character "取(take)", one can first guide students to break it down into two parts: "耳(ear)" and "又(again)". Then, guide students to explain the meanings of "耳(ear)" and "又(again)" respectively, and tell them that the original meaning of "又(again)" is hand. Show the oracle bone script and the small seal script of the character for "取(take)" to let students know that "取(take)" represents the formative intention of taking the ear with the hand. Next, ask students questions: What is the reason that the character "取(take)" is composed of two character-forming components "耳(ear)" and "又(again)? The teacher used this question to teach the students that the original meaning of the character "取(take)" is to conquer or seize, and its extended meaning is to take. In ancient wars, the victors would always cut off the ears of prisoners of war or those who died in battle to obtain the number of ears for merit and reward. Therefore, the characters "耳(ear)" and "又(again)"were used to form the character "取(take)".

In addition, it is necessary to focus on explaining the associative characters formed by the combination of the same components and guide students to summarize the rules of character construction. The character "木(wood)林(jungle)森(forest)" in the text "日(sun)月(moon)明(bright)" of the new Chinese textbook for the first grade of the unified edition apply the character formation method of placing two or three things together to indicate that as the number of the same components increases, the meaning also becomes stronger. In the teaching of character recognition, teachers should guide students to summarize the character formation rules of Assembled Ideogram: Assembled Ideogram composed of the same character-forming components,with each additional identical component, its meaning intensifies cumulatively. After students learn this rule, when they learn "晶(crystal)磊(lei)淼(miao)" in the future, they can draw inferences by analogy based on this rule, quickly and accurately infer the meanings of Chinese characters, and thus carry out knowledge transfer and independent character recognition.

6.4. Phonetic Compound: analysis and combined use

Analysis. "Analysis" refers to the analysis of the internal construction principles of Phonetic Compound, including the decomposition and understanding of the semantic functions of the radicals and the phonetic functions of the phonetic components. This strategy emphasizes starting from the formation principles of phonogram characters, helping students understand that Chinese characters are not randomly combined symbols but a system that follows certain rules. The strategy is rooted in the transparency theory of character construction methods. Phonetic Compound are composed of radicals and phonetic components. Radicals usually indicate the meaning of the character, while phonetic components provide pronunciation clues. Research shows that when learners become aware of this character formation rule, their memorization efficiency can increase by 30% to 40%. However, it should be noted that modern Chinese characters have undergone evolution, and the rationality of some Phonetic Compound has weakened to some extent, resulting in what are called "semi-rational characters" or "irrational characters". In this regard, the "analysis" strategy needs to be flexibly adjusted. The diachronic analysis method can be adopted to reveal the evolution process

of the character structure, such as showing the evolution of the character "年(year)" from oracle bone script to regular script, to help students understand that the seemingly unreasonable character shape actually contains historical reasons.

Combined Use. "Combined use" refers to the connection and application of Phonetic Compound within a larger system on the basis of theoretical analysis, including the association of radicals, the analogy of phonetic components, and the expansion of word families. This strategy focuses on the transferability and practicality of Phonetic Compound learning, and promotes memory retention and application abilities by establishing a Phonetic Compound network. The implementation of the "combined use" strategy in character recognition teaching mainly includes three ways: The first is "the association of radicals", which classifies and learns Phonetic Compound with the same radicals. For instance, by learning the characters with the radical "氵" such as "江(river)", "河(river)", "湖(lake)", and "海(sea)", connections can be established through the unity of the radicals. The second is "the analogy of phonetic components", which uses Phonetic Compound with the same phonetic components to infer their pronunciations. After mastering the pronunciation of "方(fang)", one can make analogies with the vowels of characters like "房(house)", "防(defend)", and "访(visit)". The third is "the expansion of word families", which extends the learning of Phonetic Compound to related vocabulary. For instance, after learning the word "分(fen)", expand to words such as "分开(separate)", "分数 (score)", and "分工 (division of labor)", forming a semantic network.

In actual teaching, a circular model of "analyze first and then combined use" can be adopted: first, conduct structural analysis on new Phonetic Compound, and then incorporate them into the existing character family network; After accumulating a certain family of characters, one can further deepen the understanding of the principles behind character formation through comparative analysis. This spiral upward process conforms to the constructivist learning theory and can achieve the acquisition and internalization of Phonetic Compound knowledge.

7. Conclusion

Based on the traditional theory of the "Six Categories of Chinese Characters" , and in accordance with the characteristics of the new unified Chinese textbook, combined with the actual teaching situation of the author in the school, this article explores and studies the curriculum functions and specific practices of the "Six Categories of Chinese Characters" theory in the character recognition teaching of lower-grade primary school Chinese, and clarifies the specific teaching strategies for the four types of Chinese characters, namely pictographic characters, Indicative characters, Assembled Ideogram and Phonetic Compound, in the first-grade unified textbook. It provides a useful theoretical reference for front-line Chinese language teachers on the application of the "Six Categories of Chinese Characters" theory in character recognition teaching. Moreover, to a certain extent, it provides some useful supporting materials for the theoretical research of character recognition teaching, which has certain positive significance for enriching and reinforcing the connotation of character recognition teaching theory.

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