

Analysis of Multimodal Metaphor and Values Representation in Children's Picture Books

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Abstract: Children's picture books, as a form of text interwoven with vision and language, carry rich cultural information and educational functions. The purpose of this article is to explore the phenomenon of multimodal metaphor in children's picture books and reveal its influence on ideological construction. Firstly, the article compiles the research background and puts forward the research value of multimodal metaphors in children's picture books. Then, it constructs an analytical framework for children's picture books that integrates visual semiotics and metaphor theory, and analyzes the specific use of multimodal metaphors in children's picture books through example analyses, including the interaction between images and words, the symbolism of colors and shapes, and the construction of metaphors in the narrative structure. These case studies reveal how children's understanding of the world is shaped by multimodal metaphorical strategies in picture books, which in turn subconsciously convey specific values and ideologies. Future research should explore more deeply the differences of multimodal metaphors in different cultural contexts and their application strategies in children's education, with a view to cultivating children's critical thinking and promoting diversified development of children's picture books.

Keywords: Children's Picture Books; Cultural Messages; Educational Functions; Multimodal Metaphors; Values.

1. Introduction

Children's picture books belong to multimodal discourse (Hassett & Curwood 2009; Forceville & Urios-Aparisi 2009), and the multimodal metaphors in picture books have an influential and instructive role in children's linguistic and cognitive development (Purcell 2018), as well as educational implications (O' Halloran 2016), and cultural information and educational value they contain are gradually being emphasized by academics. Picture book reading promotes the development of children's language ability, reading ability and literary literacy (Nao Matsue 2007; Blewitt et al. 2009; Hayao Kawai et al. 2011; Wasik et al. 2016). The nature of metaphor is to understand abstract concepts through concrete experience, so the expression mode of metaphor is often concrete metaphor for abstraction (Lakoff & Johnson, 1980). Multimodal metaphors, as a means of complex meaning construction implicit in picture books, have become a hot topic in the field of research due to their potential impact in children's cognitive development and value shaping.

Multimodal metaphor theory, originating from the interdisciplinary fields of linguistics, semiotics, and cognitive science, focuses on the interactive relationships and implicit metaphors of different symbol systems such as images, colors, shapes, spaces, etc. in conveying meaning. As a typical representative of multimodal text, children's picture books not only provide rich stimuli for children's cognitive development through the interweaving of images and text, but also offer valuable materials for educators and researchers to explore children's cognitive and emotional construction. However, despite the gradual rise of multimodal discourse research in recent years, there is a lack of systematic research on multimodal metaphors in children's picture books, especially in terms of their impact on value construction, which has not been fully revealed.

From the perspective of pedagogy, children's picture books play an important role in the transmission of values and the construction of social and cultural concepts. However, these

transmission processes are often latent, indirect and carried out through multimodal metaphor strategies. Therefore, a thorough understanding of the operation mechanism of multimodal metaphors in children's picture books will help us to better evaluate the impact of picture books on children's socialization and the formation of world views, so as to achieve more positive guidance in children's education. At the same time, the study of multimodal metaphor also has important implications for children's literacy education, which emphasizes the complementary role of language and vision in children's literature, and provides a theoretical basis for children's multimodal literacy training.

This study aims to reveal the role of multimodal metaphors in the construction of values and their impact on children's cognitive and emotional development through an in-depth exploration of multimodal metaphors in children's picture books. By constructing an analytical framework that integrates visual semiotics and metaphor theory, we will systematically interpret the performance of multimodal metaphors in children's picture books, from the interaction between images and words, the symbol of color and shape, to the metaphor construction in narrative structure, in order to provide a deeper understanding and reference for children's educators, picture book creators and researchers. This understanding not only helps to reveal the potential information in picture books, but also provides a new perspective for optimizing the content of children's picture books and improving reading teaching strategies.

The multimodal metaphors in children's picture books serve as implicit tools for spreading values, and research on them not only has theoretical significance but also practical value. By studying classic picture books such as *Pigs Can't Fly* and *The Very Hungry Caterpillar*, we will attempt to explore the specific application and potential impact of multimodal metaphors in children's picture books, providing strong academic support for children's comprehensive development and the formation of healthy values.

2. Multimodal Metaphor Theory and Analysis Framework for Children's Picture Books

2.1. Overview of Multimodal Metaphor Theory

Multimodal metaphor theory is an important theoretical framework for studying the construction of implicit meanings between different symbol systems in texts. This theory originates from the interdisciplinary fields of literary theory, semiotics, linguistics, and cognitive science, aiming to reveal how nonverbal elements such as images, colors, shapes, spaces, and sounds interact with linguistic symbols in multimodal texts to jointly construct meaning. In children's picture books, this multimodal metaphorical phenomenon is particularly prominent because picture books are a fusion of vision and language, constructing a deep and layered story world through the interweaving of images and words.

Visual semioticians have proposed a visual grammar that reveals the dynamic process of constructing meaning in images. This theory regards images as a language with their own vocabulary, syntax, and semantic rules that can express information independently of the language system. In children's picture books, this visual grammar constructs visual metaphors through the layout, composition, color, and shape of images, helping children understand stories, emotions, and values.

From the perspective of cognitive science, multimodal metaphor theory draws on the Cognitive Integration Theory of cognitive linguistics, which argues that meaning construction is not limited to a single symbolic system, but is the result of mutual influence and complementarity between different modes. In children's picture books, the combination of text and images enables children to form richer and deeper concepts through cross-modal association and understanding. At the same time, the multimodal metaphor theory also focuses on how children construct their self-cognition and social cognition by interpreting metaphorical information in the process of interacting with picture books. In the process of reading, children not only interpret the surface meaning of the text, but also understand the deep meaning behind the story through multimodal metaphors, which is conducive to the development of children's social emotional intelligence.

Therefore, when analyzing multimodal metaphors in children's picture books, we have to understand and apply these theories to reveal the transmission mechanism of implied information in picture books, and further explore how these metaphors shape children's cognition, emotion and social values. By constructing an analytical framework that integrates visual semiotics and metaphor theory, we can systematically interpret the application of multimodal metaphor in children's picture books, in order to provide a deeper understanding and effective teaching strategies for children's education.

2.2. Methods of Multimodal Analysis for Children's Picture Books

It is crucial to adopt appropriate analytical methods in the study of multimodal metaphors in children's picture books. In order to deeply explore the visual and linguistic elements in picture books, researchers have employed various analytical methods aiming at revealing the surface structure and deep metaphorical meanings of the text, as well as their impact on children's cognition and emotions. The following are several

main analytical methods:

Visual Grammar Analysis: Kress & van Leeuwen constructed a theoretical framework for visual grammar analysis based on the three metafunctions of systemic functional linguistics: conceptual metafunctions, interpersonal metafunctions, and textual metafunctions: representational meaning, interactive meaning, and compositional meaning (Kress & van Leeuwen, 1996). This method originates from visual semiotics, which focuses on visual elements such as layout, composition, color, and shape of images, as well as how they construct meaning through visual grammar rules. Through visual grammar analysis, researchers can reveal how images independently convey information, how they interact with text, construct visual metaphors, and help children understand stories and emotions.

Conceptual Blending Theory: In the 1990s, Fauconnier and Turner proposed the Conceptual Blending Theory. This theory emphasizes the interaction and meaning construction process between different modalities. In the analysis of children's picture books, researchers use conceptual integration theory to explore how text and images work together to form cross modal concepts, helping children build deeper understanding. For example, analyzing how images and text convey the concept of "love" through visual and linguistic complementarity, allowing children to intuitively perceive the connotation of "love".

Metaphor recognition and interpretation: This approach focuses on the identification of metaphorical examples in text, including the metaphorical relationship between images and words, and the in-depth interpretation of these metaphors. Picture books transfer the abstract emotions of characters' inner hearts to readers through multi-modal symbols, and stimulate readers' visual nerves and invoke their mirror neurons to create the effect of empathy (Zhao Xiufeng & Li Xiaowei, 2014). Researchers analyze how metaphors convey emotions, values, or social ideas in stories, and how they affect children's cognitive and emotional responses.

Narrative analysis: By examining narrative structures in picture books, researchers can reveal how multimodal metaphors construct meaning in narrative. This includes the analysis of plot setting, character development, and narrative perspective in order to understand the function and role of multimodal metaphors in narrative.

Intermodal cohesion and interaction analysis: This approach focuses on the cohesion between language and other modes, such as images, sounds, or movements, and explores how they work together to convey information. All information entities constitute a discourse, trying to express a coherent world of intrinsic meaning (Teng Da & Miao Xingwei, 2018).

Cross cultural comparison: For multimodal picture books, cross-cultural analysis can reveal the differences in multimodal metaphors in different cultural contexts, and how these differences affect children's understanding of the world and the formation of values. By comparing picture books from different cultural backgrounds, researchers can discover the commonalities and characteristics of multimodal metaphors, as well as how they adapt to specific cultural contexts.

Reader response research: In order to explore how multimodal metaphors affect children, researchers can also collect children's reading responses through empirical research, such as interviews or observations. This helps to understand how children interpret metaphors in picture books

and how these interpretations affect their cognitive and emotional development.

By applying these analytical methods comprehensively, researchers can reveal multimodal metaphorical phenomena in children's picture books from multiple dimensions, and thus gain a deeper understanding of how these metaphors shape children's worldviews and values. The integration of this methodology provides powerful tools for the creation, educational practice, and theoretical research of children's picture books, which helps to promote the cultivation of children's multimodal literacy and optimize educational strategies.

3. Analysis of Multimodal Metaphors in Children's Picture Books

3.1. Analysis of Multimodal Metaphor in Pigs Can't Fly

Pigs Can't Fly is a beloved picture book for children, which tells the humorous and witty story of little pigs trying to change themselves in various ways, only to eventually discover that he himself is the best. The multimodal metaphors in the book are rich and diverse, blending visual elements with textual narration, cleverly conveying values about accepting oneself, embracing diversity, and understanding differences.

Visual metaphor plays an important role in *Pigs Can't Fly*. The design and changes of the pig image, from color to shape, use rich metaphorical techniques. For example, the piglet was originally pink, symbolizing innocence and purity. As it transformed into various animals, its color and shape also changed accordingly. For example, when it transformed into a zebra, the black and white striped pattern symbolized its attempt to imitate other animals. This visual change not only increases the fun of the story, but also helps children understand the differences between themselves and others through comparison, as well as the importance of accepting oneself.

The interaction between words and images also constructs multimodal metaphors. The text in the book is closely linked with the images, which together build the narrative structure of the story. For example, when the pig wants to become a bird, the text says, "So he found some feathers and a shell", while the image shows the pig laboriously dragging the wings, which combine to form a metaphor for the frustration and discomfort that can come from imitating others. This interaction makes it easier for children to understand and accept the deeper message of the story, which each person has his or her own unique strengths and does not need to imitate others.

In addition, the symbolic use of color and shape is also an important embodiment of the multimodal metaphor in this book. As the pig tries to become a different animal, the changes in color and shape reflect its mood and psychological state. For example, when it mimics different animals, the colors and shapes are changing, symbolizing the confusion and dissatisfaction in the piglet's heart, which provides visual cues for children to understand and express emotions, contributing to their emotional development.

The narrative structure of the story itself also contains multimodal metaphors. The pig keeps trying, keeps failing, and then learns from each failure, eventually accepting himself. This narrative model reflects setbacks and growth in life, conveys educational messages about adaptation,

understanding and acceptance through multimodal metaphors, and encourages children to remain open and accepting in the face of differences.

Through an in-depth analysis of the multi-modal metaphors in *Piggy Metamorphosis*, we can observe how picture books build a rich story world through the interweaving of vision and language, and imperceptibly convey to children the values of accepting themselves and embracing diversity. This case demonstrates the power of multimodal metaphors in children's picture books to convey complex information in a way that is accessible to children and has a profound impact on their emotional, cognitive and social development. Future research could further explore multimodal metaphorical strategies in different cultural contexts and how these strategies can be applied to educational practices to foster multimodal literacy and healthy values in children.

3.2. Exploration of Multimodal Metaphor in The Very Hungry Caterpillar

The Very Hungry Caterpillar is a classic work by Eric Carle, telling the wonderful journey of a caterpillar from hatching to becoming a butterfly with its bright colors, vivid images, and rhythmic text. The multimodal metaphors in this book are both interesting and educational, conveying profound themes of growth, change, and food and life cycle through the clever fusion of visual and linguistic elements.

Visual metaphor plays a central role in *The Very Hungry Caterpillar*. The image of the caterpillar in the picture book has undergone significant changes, gradually growing from a small egg to a plump, colorful worm. This visual change not only showcases the growth process of life, but also metaphorically represents the cycle of gluttony and satisfaction, just like a caterpillar satisfying its appetite and embarking on a new day of adventure. This metaphor helps children understand the natural processes of growth and change, while teaching them the importance of dietary moderation and moderate consumption.

The interaction between images and text further constructs multimodal metaphors. The layout of each page is carefully designed, with images and text closely integrated to form a narrative rhythm. When the caterpillar eats various foods, the image of each food occupies an entire page, corresponding to the description of the text. This visual emphasis on the types and quantities of food reinforces the theme of the caterpillar's "hunger". At the same time, the choice and quantity of food also imply the passage of time and stages of the life cycle, such as eating an apple on Monday, gnawing through two pears on Tuesday, and eating a lot of food on Saturday. "That night he had a stomachache", which metaphorically represents the consequences of overeating and provides educational information for children about balanced and moderate eating.

Color and shape also play a symbolic role in this book. Early in the story, the caterpillar has a single color, and as it eats more food, its body begins to take on a variety of food colors, and the richness of colors symbolizes the changes and growth the caterpillar undergoes. In terms of shape, the round body of the caterpillar contrasts with the shape of the food, triggering children's exploration of shape perception. At the same time, through the behavior of the caterpillar's "eating", it is a metaphor for life's need for nutrition and adaptation to the environment.

The construction of metaphor in narrative structure cannot be ignored. The story begins with the hatching of a caterpillar

and ends with its cocooning into a butterfly, a process that itself is a metaphor for the cycle of life. The caterpillar grows up, goes through growing pains (feeling uncomfortable after eating too much food), and then find the safety of a cocoon and enter the silent inner world, where he undergoes transformation and finally becomes beautiful butterfly. This process encourages children to embrace change, understand the cyclicity of life, and from it gain an appreciation for beauty and laws of nature.

Through an in-depth analysis of the multimodal metaphors in *The Very Hungry Caterpillar*, we can see how the picture book uses the interweaving of vision and language to tell a story of growth, change, and natural cycles in a way that is easy for children to understand. Through these metaphors, children not only experience pleasure in the story, but also subtly learn valuable lessons about life, balance and acceptance. This multimodal approach provides children with a lively and stimulating learning platform that helps them develop healthy values in their emotional, cognitive and social development. Future research could investigate how multimodal metaphors are embraced and interpreted in different cultural contexts, and how these strategies can be applied to a wider range of educational materials to promote children's overall development.

4. Conclusion

The multimodal metaphorical phenomena in children's picture books, as a key means of constructing deep meaning in texts, not only enriches children's reading experience, but also has a profound impact on their cognitive development and value shaping. Through this study, we delved into the manifestations of multimodal metaphors in children's picture books, such as the interaction between visual and textual elements, the symbolism of color and shape, and the construction of metaphors in narrative structures. Through detailed analysis of two cases, *Pigs Can't Fly* and *The Very Hungry Caterpillar*, we demonstrated how multimodal metaphors convey value information in a way that children can easily accept.

Research has found that multimodal metaphors in children's picture books not only provide rich cognitive stimuli, but also inadvertently shape children's worldviews. Visual metaphors, such as changes in color and shape, intuitively convey emotions, life processes and values, while the interaction between images and text strengthens the narrative rhythm of the story, helping children understand and absorb implicit information. The metaphorical construction in narrative structure guides children to receive educational information about growth, change, and acceptance through vivid story frameworks.

However, the use of multimodal metaphors in children's picture books is not harmless. The ideological risks lurk within it, as these metaphors may be implicit, complex, and difficult to perceive. Researchers and educators must be aware that these metaphors may convey specific social values and cultural concepts, thereby influencing children's cognitive construction. This requires a greater emphasis on examining multimodal metaphors in the creation, evaluation, and teaching of children's picture books to ensure that the

information they convey is beneficial for the comprehensive development of children and the formation of healthy values.

Future researches should focus on the differences in multimodal metaphors in different cultural contexts, and how these differences affect children's understanding and value construction. Cross cultural comparison can not only reveal the universality and specificity of multimodal metaphors, but also provide theoretical basis for the diversified development of children's picture books. In addition, exploring how multimodal metaphors can be effectively utilized in practical reading teaching, as well as how to design and promote more diverse and inclusive multimodal educational resources, are also topics worth further exploration.

The multimodal metaphorical phenomenon in children's picture books is an area worthy of in-depth research. It not only adds rich colors to children's reading experience, but also provides new perspectives and strategies for children's education. By systematically analyzing and interpreting multimodal metaphors in children's picture books, teachers and parents can better explore the educational value of children's picture books, guide their healthy growth, and form independent and diverse ways of thinking. It can also more effectively guide children to understand and critique the information in the text, promoting their development of critical thinking.

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