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A Study on Visual Simplification Strategies for Picture Book Illustrations for Children Aged 3–6

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Abstract: ***Background:*** Original Chinese picture book illustrations for young children are often dominated by adult perspectives and overloaded with redundant visual elements. This overload can easily create a perceptual mismatch between pictorial meaning and the cognitive-developmental level of children aged 3 to 6 years who are in the preoperational stage. ***Purpose:*** This study aims to move beyond the limitations of a single disciplinary paradigm by systematically removing redundant visual information from original picture books and constructing scientifically adaptive visual simplification strategies for illustration. This approach promotes a shift in picture book illustration from empiricist creation toward a child-centered perspective. ***Methods:*** Based on literature research and case analysis, this study examined six representative picture books for young children from China and abroad, including *A New Year's Reunion* and *The Very Hungry Snake*, as textual objects, and interdisciplinary deconstruction was conducted by deeply integrating developmental psychology, Gestalt psychology, and reception aesthetics. ***Results:*** The study constructed a dual-dimensional strategic framework comprising formal and narrative simplification, systematically refining micro-level indicators related to form, color, composition, characters, scenes, and continuity. These strategies were subsequently translated into an operational three-stage practical model of conception, drawing, and layout. ***Conclusion:*** The simplification strategies proposed in this study help reduce the visual processing and cognitive load of children aged 3 to 6 years when they encounter large-scale or complex narrative scenes. These strategies not only provide explicit practical guidance for transforming original picture book illustration toward a child-centered perspective but also expand the theoretical and paradigmatic space of interdisciplinary research on preschool children's visual cognition and illustration design.

***Keywords*:** Picture book illustration; visual simplification; child-centered design; preschool children; visual cognition

1. Introduction

Picture books are important visual media through which children understand the world and develop aesthetic experiences.

In recent years, research on image narration in children's picture books has developed rapidly, although the overall number of studies remains limited. The research perspective has gradually shifted from a single focus on artistic creation to interdisciplinary integration involving education, psychology, communication, and other fields (Li, 2025). At the same time, market-oriented works have increasingly revealed an excessive preference for visual complexity and ornamentation. Many works show obvious problems such as information overload, complicated forms, and excessive color accumulation. Although such works may possess high ornamental value from an adult aesthetic perspective, they often exceed the limited cognitive processing capacity of children aged 3 to 6 years, making it difficult for them to extract core information and creating obstacles to reading.

This contradiction is especially prominent in the current children's publishing industry. Because children's books have the distinctive characteristic of being purchased by adults but read by children, marketing pressure from content e-commerce and short-video livestreaming channels can easily lead the market into a utilitarian, theme-first orientation. This orientation often becomes adult-centered preaching and moral discipline. Accompanying this tendency is a form of "traffic-driven visual bombardment." In order to create impact within an extremely short screen dwell time, many original works rely excessively on digital effects and highly saturated colors to produce full-spread narratives. In recent short-video sales rankings, many books for young children have attracted parents' attention through highly realistic rendering and fluorescent color bombardment. Such images, lacking visual breathing space, become visual noise that exceeds children's perceptual load, highlighting the urgency of shifting picture books for young children toward strategies of visual simplification.

However, systematic research on the specific dimension of visual simplification still faces an obvious academic gap. Technology not only provides minimalism with operational tools but also helps it move from sensibility toward data-driven rational design (Li et al., 2025). Existing scholarship in China and internationally has accumulated a body of picture book research, but it still shows clear disciplinary fragmentation. The fields of preschool education and children's literature generally focus on macro-level educational functions, thematic classification, and psychological healing values, often treating illustration as subordinate to text and failing to deconstruct micro-level pictorial mechanisms. Art and design studies, by contrast, tend to emphasize purely aesthetic features; the evolution of artistic styles or subjective techniques can easily slide into creators' personal empiricism without objective scientific evidence. Although some scholars have sporadically suggested that illustrations for young children should fit children's aesthetic preferences or that pictures should not be too crowded, these statements mostly remain qualitative aesthetic proposals and do not systematically construct visual simplification as an independent design strategy and image variable. This disciplinary fragmentation means that academia has not yet clarified what objective mapping relationship exists between specific micro-level visual variables, such as color brightness and Gestalt composition, and children's visual perception at particular developmental stages. This is precisely the research gap that existing studies have overlooked and that urgently needs to be addressed.

Accordingly, this study moves beyond the limits of a single discipline and systematically integrates preschool developmental psychology, Gestalt psychology, and the signifying mechanisms of illustration design. According to Piaget's theory of cognitive development, although children in the preoperational stage cannot engage in strict logical thinking, the development of language enables them to use images and symbols to represent the objective world. Although children in this stage are mainly egocentric, they also show interest in surrounding objects and people (Matulka, 2017). At the same time, children in the preoperational stage can concentrate on only a small amount of information at any given moment; their thinking is often static, and they tend to notice the immediate state of things without considering transformation or change (Galotti, 2017). Thus, age-appropriate picture book illustration for preschool children is not a simple collage of adult aesthetic styles and children's reading content but a subtractive artistic practice grounded in the laws of children's cognitive development. Its core goal is to achieve effective communication with children through clear and powerful visual language.

2. Theoretical Foundations

2.1 Definition of the Core Concept: The Connotation and Extension of "Visual Simplification Strategies"

Within the interdisciplinary context of this study, the core concept in the title, "visual simplification strategies," does not refer to the blind or disorderly deletion of pictorial elements, nor does it pursue an absolute minimalism of extreme emptiness. This study defines the term strictly as a structural and systematic design behavior of "perceptual subtraction," in which creators, based on the cognitive-developmental characteristics of children aged 3 to 6 years in the preoperational stage, aim to reduce children's visual processing load and improve narrative decoding efficiency by intervening in the formal variables and narrative structures of illustrations. In concrete design practice, this strategy primarily comprises two symbiotic and coordinated dimensions: formal simplification and narrative simplification.

In the dimension of formal simplification, the core task is to purify micro-level visual variables and remove visual noise that interferes with children's attention. Creators should focus on the geometric reduction of forms, precise control of the color range, and a sense of compositional order. Specifically, form simplification emphasizes using basic geometric outlines to refine the image characteristics of objects while concealing complex microtextures and realistic light and shadow. Color simplification requires the dominant tones of a picture to be controlled within a limited range of color systems, avoiding indiscriminate color accumulation and using broad categorical schemata to construct clear visual order and emotional atmosphere. Composition simplification uses reasonable white space and planar spatial reorganization to scientifically refine image information at the perceptual level, thereby guiding the viewer toward a single and explicit visual focus.

In the dimension of narrative simplification, the core task is to optimize the macro-level visual framework and smooth the spatial-temporal jumps and cognitive gaps caused by page turning. This dimension is manifested in the symbolized shaping of characters, the functional filtering of scenes, and the rhythmic regulation of page continuity. Character symbolization requires removing redundant surface decoration, giving the protagonist a highly recognizable core visual label, and ensuring strong perceptual constancy across page turns. Scene functionalization advocates blurring, refining, or stabilizing complex street scenes and spatial environments so that backgrounds yield to the flow of key foreground information and become functional frameworks that serve the core plot precisely. Page continuity focuses on using structural plot repetition, contrast, gradation, or kinetic cues to regulate the rhythm of page turning, thereby conforming to the symbolic representational characteristics of young children and refining narrative logic at the cognitive level.

2.2 The Multidisciplinary Trajectory of Picture Book Research

As a co-creative form of children's literature and art, the picture book has developed within a multidisciplinary research trajectory. In the field of children's cognition, the modern Western Enlightenment fundamentally overturned the traditional view that children are merely smaller adults. Jean-Jacques Rousseau argued that, in the order of life, childhood has its own place: adults should be treated as adults and children as children (Arnheim, 1998). In intellectual education, he stressed that children should learn from experience as much as possible and should not be confronted with problems beyond their abilities (Rousseau, 2011). This naturalistic view of education thoroughly liberated children's subjectivity and laid a philosophical foundation for later research on children's visual cognition. Michel de Montaigne regarded the education and upbringing of children as one of the most difficult and greatest subjects in the humanities. He argued that education should focus on developing children's judgment and thinking, and that all things can be seen and felt by the mind, but the mind must absorb nourishment by itself (Montaigne, 2016). Tadashi Matsui also emphasized children's perception of picture books, comparing children's inner world to "fertile soil." He argued that perception is the source of the power that cultivates this soil and that the key to perception lies in allowing the active five senses to function first (Matsui, 2017). This view reveals that picture books are not one-way outputs but processes of meaning co-construction involving authors,

illustrators, and readers. Scholarship has therefore developed a multidimensional perspective extending from authors and illustrators to the works themselves.

At present, there remains a certain disconnection between research and practice in the field of picture book illustration for young children. International scholarship paid relatively early attention to the relationship between children's visual cognition and picture book design. Piaget held that children learn through experience, that they are naturally capable of learning, and that they acquire concepts through behavioral experience (Nodelman, 2018). In Words About Pictures, Perry Nodelman notes that perception, as part of a system of meaning, must depend on experience; however, image cognition is an acquired ability, and it affects not only how we understand picture-text relationships but also how we understand the relationship between picture books and their intended readers: The culture that adults take for granted is new to children (Santrock et al., 2023). Nevertheless, specialized and systematic research on the specific design dimension of visual simplification remains relatively scarce. Overall, considerable room remains for a research path that integrates developmental psychology, visual cognitive science, and design studies while focusing on the construction of simplification strategies.

2.3 Developmental Psychology: Cognitive Adaptation in the Preoperational Stage

From the perspective of developmental psychology, Piaget's theory of cognitive development provides a foundation for understanding young children's visual processing. Children aged 3 to 6 years are in the preoperational stage and begin to use words, mental images, and pictures to represent the world. Their symbolic thinking goes beyond the simple connection between sensory information and bodily actions, forms stable concepts, and gives rise to mental reasoning activities (Liu & Zhang, 2025). Thinking at this stage can be further divided into two substages: symbolic function from ages 2 to 4 and intuitive thought from ages 4 to 7. One limitation of preoperational thought is centration, namely the tendency to focus attention on one feature while neglecting many other aspects (Wang, 2024). Therefore, overly complex illustrations often create information interference and hinder children's grasp of core content.

From the perspective of the development of children's visual perception, perceptual constancy is still being refined at this stage, and children's ability to represent three-dimensional space remains weak. When facing complex spatial perspective or dramatic geometric changes in shape, the brain has difficulty automatically eliminating surface interference produced by viewpoint, light, and shadow. This difficulty can easily lead to perceptual misjudgment and interruption in object recognition.

Thus, form geometricization and character symbolization in visual simplification strategies are, in essence, precise adaptations to children's perceptual concentration and the developmental stage of perceptual constancy. By removing irrelevant elements, strengthening the main image, and limiting the number of colors, simplification strategies can closely match children's cognitive characteristics and direct their attention to the key information flow of story development, thereby helping to reduce cognitive load.

2.4 Gestalt Psychology: The Gestalt Tendency of Perceptual Organization

From the perspective of Gestalt psychology, the construction of graphic perception is by no means the mechanical addition of isolated visual elements, but rather a holistic act of structural organization. This psychological principle holds that, within a Gestalt, the structure of the whole depends on the structure of its parts, while the structure of the parts also depends on the structure of the whole (Golomb, 2017). When discussing how vision organizes a fragmented external world into a stable whole, perceivers often follow specific organizational laws or principles to form interpretations of perceptual objects (Feeney et al., 2019). In his theory of visual perception, Rudolf Arnheim points out that perception tends to grasp any stimulus pattern as the simplest possible shape. This Gestalt tendency

provides the underlying methodological support for the color-range control and scene functionalization constructed in this study. In the face of complex external visual stimuli, children in the preoperational stage, owing to the limitations of their brain processing mechanisms, are more inclined to use broad categorical schemata to structurally purify and filter image information. On the one hand, at the level of color purification, simplified design uses the Gestalt principle of similarity to apply large-area flat color fields, compressing complex light, shadow, and texture into limited color schemata and helping to filter background noise. On the other hand, at the level of scene structure, design relies on the principles of closure and proximity to subjectively blur the background, transforming it into a stable functional framework that yields to the core plot and helps children's brains quickly extract and construct a clear and stable meaning structure.

2.5 Reception Aesthetics: The "Appeal Structure" of Visual Space and Reader Construction

While conforming to the laws of children's cognition and perception, simplification strategies also accord aesthetically with the appeal structure in reception aesthetics. This theory holds that the transformation of a text into a literary work takes place in the reader's concrete act of reading. In other words, it is through the reader's active participation that the artistic value of the work is ultimately enhanced. A text contains not only blanks but also gaps and negations. A blank has connectability within a text; it refers to parts that are not actually written or not explicitly expressed, yet are implied or suggested to the reader by the written parts of the text (Wei, 2026). Thus, extremely realistic and overly detailed illustrations deprive children of the right to participate imaginatively. By contrast, simplified images and pictorial white space can construct an inviting appeal structure, providing children with aesthetic space for completion, association, and re-creation based on their own experience, and transforming reading from passive viewing into active participation and creation.

Wolfgang Iser proposed the concept of the implied reader, pointing out that the realization of textual meaning ultimately depends on the reader's imagination. The text stimulates mental images in the reader, and these mental images give life to the meanings implied by the text. During reading, the reader continually forms mental images and shifts points of emphasis to enter the text. The implied reader is in fact the concrete embodiment of the two poles of literary communication: at the artistic pole, the author's text presupposes the reader's act of realization, while at the aesthetic pole, the reader's reading ensures the completion of the text (Lin, 2012).

The sense of compositional order and page continuity in visual simplification strategies is the concrete realization of this aesthetic logic. Taking large areas of white space or structural plot repetition in picture books as examples, the deeper meaning produced by the intersection of image and text depends on the reader's completion through personal experience. If visual narration is overly complete and filled with excessive details, it will deprive readers of active participation and create cognitive obstacles. A minimalist visual space reorganized through large areas of white space and planar composition can help stimulate children's agency as readers engaged in constructive activity, driving them to complete the ultimate construction of meaning through embodied life experience.

2.6 The Internal Integration Mechanism of the Three Theoretical Resources: A Three-Stage Cognitive Progression Model

The developmental psychology, Gestalt psychology, and reception aesthetics introduced in this study are not isolated, mechanically juxtaposed theoretical inventories. Rather, they jointly constitute a logically interlocking and progressive three-stage cognitive progression model based on the full psychological pathway through which children read picture book illustrations: psychophysiological constraints, perceptual-

order organization, and aesthetic-resonance reconstruction. These three theoretical resources perform distinct functions within the chain of argumentation and respond precisely to core issues at different levels of visual simplification strategies for picture books for young children (see Table 1).

Table 1. Interdisciplinary theoretical integration and progressive transformation mechanism of visual simplification strategies for picture books

Theoretical level of analysis	Core theoretical resources	Core function in visual simplification	Psychological mechanism of image deconstruction	Corresponding micro-level design indicators
Stage 1: Constraint boundary layer	Developmental psychology of young children (Piaget's theory of cognitive development)	Anchors cognitive and physiological ceilings and clarifies the scientific necessity of visual simplification.	Clarifies the limitations of centration and the developmental insufficiency of perceptual constancy in children aged 3 to 6 years in the preoperational stage, thereby defining the boundary of young children's visual processing load.	Form geometricization; character symbolization
Stage 2: Formal transformation layer	Gestalt psychology (Arnheim's theory of visual perception)	Purifies micro-level visual variables and provides a formal methodology for perceptual organization.	Explains, through the Gestalt tendency and organizational principles such as similarity, proximity, and closure, how the brain efficiently organizes image elements into concise and stable wholes.	Color-range control; scene functionalization
Stage 3: Aesthetic elevation layer	Reception aesthetics (Iser's aesthetics of expectation)	Constructs pictorial appeal structures and activates advanced aesthetic participation through active completion.	Transforms visual white space and indeterminacies into aesthetic driving forces, establishes the subjectivity of readers engaged in constructive activity, and activates children's active completion and meaning construction.	Compositional order; page continuity

In summary, the three theoretical resources are not arranged in a flat parallel relationship. Rather, developmental psychology serves as the boundary of constraints, Gestalt psychology as formal transformation, and reception aesthetics as aesthetic elevation. Progressively layered and logically complementary, they jointly form a complete argumentative loop in which visual simplification strategies for picture book illustration for young children move from cognitive and physiological constraints to perceptual formal organization and then to dynamic aesthetic effects. This model not only clarifies the progressive logic of simplification at the theoretical level but also provides a direct interdisciplinary deconstruction path and a practical design guide for deriving and applying the micro-level design indicators of form, color, composition, and related elements in the following sections.

3. Research Methods and Design

3.1 Research Objects

In response to the practical problem that Chinese picture books for young children are generally dominated by adult perspectives and overloaded with redundant visual elements, this study followed the research principles of cognitive adaptation, Chinese-foreign comparison, and dimensional complementarity, and selected six classic picture books for young children from China and internationally as analytical samples. Among Chinese picture books, Zhu Chengliang's *A New Year's Reunion*, Zhou Xiang's *The Morning Market in Lotus Town*, and Lü Shasha's *Mr. Snail's Kindergarten: Hide-and-Seek* were selected. All three works have a relatively high level of international recognition. The first two condensed local folk customs and simplified pictorial forms and color expression, reflecting the creators' ability to refine and deconstruct folk scenes; they serve as representative models of pictorial subtraction. *Hide-and-Seek* represents the minimalist image-creation tendency of a new generation of Chinese picture books, relying on large areas of white space and planar spatial reconstruction to build a concise and smooth

reading logic through visual movement. The international samples included Tatsuya Miyanishi's *The Very Hungry Snake*, Margaret Wise Brown's *Goodnight Moon*, and Mac Barnett's *Sam and Dave Dig a Hole*. These three works possess concise and pure visual symbols, and their pictorial structures closely align with the cognitive characteristics and visual information-processing laws of children aged 3 to 6 years who are in the preoperational stage.

3.2 Research Methods

To ensure that the strategic framework developed had both theoretical depth and practical operability, this study primarily adopted literature research and case analysis.

During the literature research phase, this study systematically reviewed literature in related fields, with a focus on core theoretical works and research findings on children's picture book illustration design. This review summarized existing research hotspots, consensus, and gaps, thereby providing a solid theoretical and documentary foundation for the construction of simplification strategies.

In the case analysis phase, this study conducted an in-depth deconstruction of the six classic picture books described above. At the formal level, the analysis focused on the three major visual elements of form, color, and composition and analyzed their simplified characteristics and modes of expression. At the narrative level, the study examined the three core aspects of character setting, scene construction, and page continuity, and analyzed their simplification logic and narrative effects. Finally, based on the results of the case analysis, the study summarized transferable and operational visual simplification strategies and constructed a complete application system (see Table 2).

Table 2. Analytical dimensions and criteria for visual simplification in picture book illustration for young children

First-level dimension	Secondary observation indicator	Simplification criterion (low-load feature)	Corresponding case evidence
Formal simplification	Form simplification	Uses basic geometric forms to summarize complex objects and conceals complicated textures.	*The Very Hungry Snake* (e.g., grass, grapes, and apple)
	Color simplification	Controls the dominant tones within three to four core color systems and avoids realistic gradients and layered accumulation.	*Goodnight Moon* (e.g., tranquil green and warm orange-red)
	Composition simplification	Uses large areas of white space; ensures that the visual focus is single and explicit and that background noise is absent.	*Sam and Dave Dig a Hole* (e.g., large areas of earth-layer white space)
			Mr. Snail's Kindergarten: Hide-and-Seek (e.g., pure white background and planarized space)
Narrative simplification	Character symbolization	Ensures that the protagonist has a highly recognizable core visual label and maintains strong consistency across page turns.	*The Very Hungry Snake* (e.g., oval head and wavy body)
	Scene functionalization	Determines whether the spatial scene is fixed or is refined through visual language to serve the core plot closely.	*Goodnight Moon* (e.g., fixed green room)
			The Morning Market in Lotus Town (e.g., white-line drawing and white space focusing on boats and the bridgehead)
	Page continuity	Determines whether structural repetition or stable kinetic cues such as water flow and gaze exist between page turns.	*Sam and Dave Dig a Hole* (e.g., repeated composition of "missing" the diamond)
			The Morning Market in Lotus Town (e.g., horizontal movement of water flow and boats)
			Mr. Snail's Kindergarten: Hide-and-Seek (e.g., bidirectional gaze and dynamic correspondence)

4. Comparison and Construction of Visual Simplification Strategies in Picture Book Illustration

4.1 Visual Condensation in Formal Simplification: Form, Color, and Composition

1) Form simplification: Geometric reduction and feature extraction

Cognitive development usually begins with holistic, undifferentiated concepts and gradually moves toward more specific and differentiated concepts. The core of form simplification lies in geometric reduction and feature exaggeration, aiming to convey clear images through concise contours.

The international classic picture book *The Very Hungry Snake* (see Figure 1) demonstrates geometric reduction and feature extraction as a purifying design mechanism. From the perspective of image structures and design mechanisms, Tatsuya Miyanishi removes naturalistic depiction and recreates the core character, the snake, as an oval head and a wavy, band-like body outlined with a thick black closed contour. Meanwhile, the grass, apples, and grapes in the environment are purified into semicircular, circular, and triangular block arrays, respectively. This design mechanism, which purifies, boundary lines and filters background noise, abandons microtextures—such as snake scales and leaf veins—and realistic light and shadow, thereby transforming the complex forest into flat monochrome fields. As a result, when the snake's body changes shape after swallowing food, dramatic tension is released; the conflict between the constancy of the head symbol and the novelty of the body's local changes constructs a clear dynamic narrative cue.

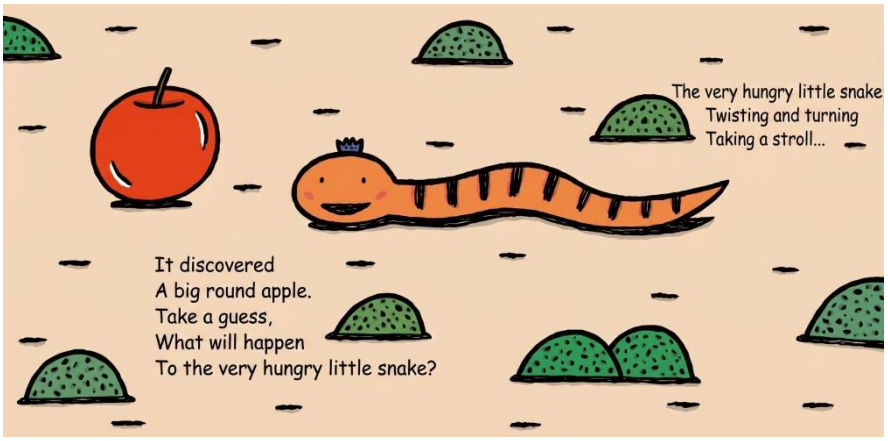


Figure 1. Page illustration from The Very Hungry Snake (Miyanishi, 2017)

This micro-level image mechanism adapts to children's cognitive development. Preschool children aged 3 to 6 years are in the preoperational stage, and their perceptual processing shows an obvious tendency toward centration, while their perceptual constancy is not yet fully mature. Form simplification constructs an efficient cognitive filtering mechanism for young children's brains, enabling their limited attentional resources to focus on the core narrative nodes of transformation, helping to remove excessive visual noise and ensuring continuous tracking of character identity across page turns.

At a deeper theoretical level, this design is highly consistent with Arnheim's visual perception theory in Gestalt psychology, especially the tendency toward perceptual Gestalt. It capitalizes on the perceptual instinct by which the brain automatically completes simplified graphics into meaningful wholes, encouraging children to perform active visual completion in their minds. At the same time, large areas of planar visual white space construct the indeterminacy structure of reception aesthetics at the aesthetic level, transforming visual blanks into aesthetic driving forces and inducing reading

expectations. This prompts children to draw on their embodied life experience to fill in and reconstruct the narrative blanks of the picture book, ultimately achieving unity between age-appropriate cognitive adaptation and artistic aesthetics.

In the context of formal simplification, the original Chinese picture book *A New Year's Reunion* (see Figure 2) also demonstrates distinct artistic force. From the perspective of image elements and design mechanisms, in the spread depicting "Dad has come home," the red lanterns, suitcase, and characters' faces all abandon detailed representation and are instead rendered as full and concise geometric blocks and contours. Through image mechanisms such as simplified character boundaries and the subordination of background layers, the creator integrates the parents into a unified whole and represents the suitcase as a highly saturated red rectangle. At the same time, buildings and roof tiles are reduced to large dark strip-like blocks to weaken background noise and actively yield to the dynamic visual movement of the father walking forward in the foreground. The linearly arranged round red lanterns under the eaves function not only as traditional festival symbols but also as counterparts to the square suitcase on the ground, thereby carrying the dual symbolic function of guiding children's gaze to the right.



Figure 2. Page illustration from A New Year's Reunion (Yu & Zhu, 2011)

This design mechanism adapts to the transformative characteristics of children's cognition. When preschool children aged 3 to 6 years encounter complex realistic spaces and visual symbols, they are highly prone to perceptual misjudgment. *A New Year's Reunion* uses large-area geometric schemata to perform visual subtraction, helping to remove excessive visual noise, protect perceptual constancy, and assist children in quickly identifying the core plot within a large-scale scene.

This visual simplification aligns with the Gestalt tendency in Gestalt psychology. Through broad color reduction and scene filtering, the design conforms to the brain's perceptual instinct to complete simplified graphics into a stable whole. Meanwhile, the planar reorganization of visual space corresponds to the principles of Iser's appeal structure in reception aesthetics. By using simplified forms and architectural white space to construct motivating visual blanks, the illustration creates an aesthetic space of completion. This setup activates and drives children to connect and reconstruct story clues through their own life experience, ultimately achieving a deep unity between age-appropriate cognitive adaptation and artistic aesthetics.

2) Color simplification: Color-range control and emotional guidance

Color simplification aims to establish clear visual order and emotional atmosphere through color-range control and planar treatment. This strategy shows a strong pattern of dynamic regulation in Goodnight Moon (see Figure 3).

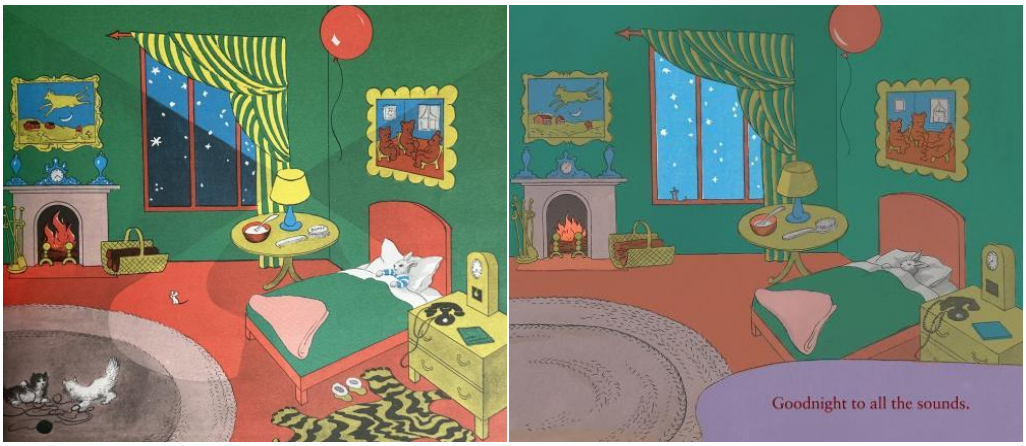


Figure 3. Page illustration from Goodnight Moon (Brown & Hurd, 2017)

From the perspective of image structures and design mechanisms, across page transitions within the same room scene, the colors of the book undergo a clear progressive attenuation. On the left side of the image, large areas of highly saturated tranquil green walls and warm orange-red flooring build the main indoor palette. As the pages turn to the right-side image, the creator subjectively lowers the brightness and saturation of the entire picture. This shift darkens the green walls into deep green, turns the orange-red floor into dark red, and greatly narrows the range of bright yellow lamplight, thereby simulating the physical light and shadow of all things falling asleep. This micro-level color mechanism precisely adapts to the causal chain between children's cognitive effects and theoretical explanation. Children aged 3 to 6 years are in the preoperational stage and are perceptually prone to centration on bright, scattered elements. By strictly limiting the color range and progressively reducing brightness and saturation across page turns, the book successfully constructs a perceptual protection barrier for young children. This design helps avoid visual processing fatigue and naturally directs children's attention toward the rhythm of falling asleep.

From the perspective of Gestalt theory, the broad, flat application of cool and warm color blocks conforms to the Gestalt tendency of human perception to organize visual information into broad categorical schemata. At the level of reception aesthetics, the gradual darkening of color variation constructs an immersive appeal structure, transforming the large areas of darkened visual shadow into suggestive aesthetic blanks. This induces children's reading expectations and encourages them to draw on their embodied sleep-related experience to actively imagine and complete the warm atmosphere of the image.

This strategy of using color to perform categorical reduction and thereby purify visual schemata also develops a specific mode of cultural adaptation when original Chinese picture books address extremely complex folk and street-life themes. *The Morning Market in Lotus Town* (see Figure 4) offers a typical example. From the perspective of image structures and design mechanisms, facing a complex Jiangnan water-town scene, Zhou Xiang carefully regulates the mechanisms of broad color-field reduction and strong cool-warm contrast. Dense houses on the left side of the image are integrated into a calm and weighty dark-brown palette, using broad, expressive brushstrokes to dissolve realistic details. The winding waterway on the right is purified into a strongly receding blue band. At the same time, boats and vendors are highly refined into color blocks. Through strong cool-warm and light-dark contrasts and a design that wraps small focal points in large color fields, the complex street-market structure is instantly clarified.

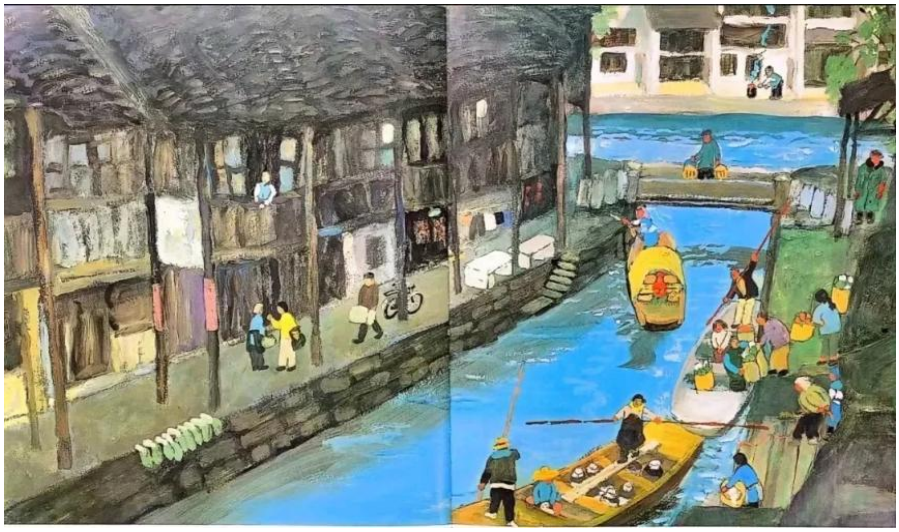


Figure 4. Page illustration from The Morning Market in Lotus Town (Zhou, 2006)

This micro-level color mechanism adapts to the causal chain between children's cognitive effects and theoretical explanation. Because children in the preoperational stage have difficulty processing the features of multidimensional space simultaneously, the book constructs a cognitive processing barrier at the source by purifying the colors of the architectural and river backgrounds. This helps avoid visual processing fatigue and information overload. The small, richly colored blocks are directly transformed into strong visual focal points against the blue background, precisely guiding children's gaze toward the core plot.

At a deeper theoretical level, this method corresponds to the Gestalt tendency, using the brain's instinctive ability to organize large areas of dark brown and blue into a stable background whole. Meanwhile, the color schema of expressing form through subjective intention constructs the appeal structure of reception aesthetics, successfully encouraging children to mobilize their embodied life experience of a lively marketplace to actively fill in, converse with, and construct the deep local warmth behind the picture.

3) Composition simplification: Focus, concentration, and the construction of order

The goal of composition simplification is to remove visual noise and establish a clear focus, order, and reading path. This strategy appears in *Sam and Dave Dig a Hole* (see Figure 5) as a page space with a strong sense of geometric order.



Figure 5. Page illustration from Sam and Dave Dig a Hole (Barnett & Klassen, 2014)

From the perspective of image structures and design mechanisms, the left side of the spread is divided into right-angled geometric blocks: a large, heavy dark-brown earth layer and an L-shaped white vertical digging tunnel. The creator completely filters out realistic underground textures and places the narrative element of the pink diamond near the tunnel. This concise compositional visual language removes pictorial impurities and background noise, forming a clear visual focus within the space constructed by the dark earth layer. It precisely adapts to the immature spatial representational ability of preschool children aged 3 to 6 years in the preoperational stage, who are highly prone to perceptual dispersion when facing complex spaces or fragmented textures. The vast white space of the dark earth layer actively performs visual subtraction and greatly relieves young children's visual cognitive load, enabling them to focus on the protagonist's actions along orderly lines.

This composition also conforms to the principles of perceptual organization in Gestalt psychology, using the brain's instinctive tendency to organize large areas of soil into a stable spatial whole. From the perspective of reception aesthetics, the massive earth-colored blocks and white tunnel are transformed into an appealing structure. Rather than weakening expressive force through the reduction of elements, the image leaves enormous aesthetic imaginative space through the missing diamond and induces reading expectations. It successfully encourages children to mobilize life experience to reconstruct and fill in the narrative blank of the image, transforming static reading into an embodied game of deciphering and co-creating the narrative through imagination.

This minimalist composition and planar spatial reorganization are also clearly manifested in the new generation of original Chinese picture books. Lü Shasha's *Hide-and-Seek* (see Figure 6) demonstrates the corresponding design mechanism. From the perspective of image structures and design mechanisms, the creator completely removes the environmental noise of a realistic kindergarten space and replaces it with an extremely pure white background. On the left is the "hidden kitten" character, created by combining an umbrella and a wooden bucket into a blue symbolized image; on the right is the blue "little bear seeking" character, leaning forward with arms extended. The picture removes impurities through large areas of visual white space and relies only on the bidirectional gaze and finger movement formed by the opposing flow of the characters on the two sides, drawing a clear horizontal visual guidance path across the white background.



Figure 6. Page illustration from Mr. Snail's Kindergarten: Hide-and-Seek (Lü, 2022)

From the perspective of micro-level compositional mechanisms, because environmental impurities that would disperse attention are removed, young children's visual processing load is reduced to the minimum. This reduction allows them to follow the little bear's gaze and movement and focus directly on the action-based correspondence between the two characters. At the theoretical level, the broad blank area between the two characters corresponds to the appeal structure of reception aesthetics. This seemingly

empty visual blank not only intensifies the distance between seeking and finding and induces reading expectations, but also successfully encourages children to rely on their embodied experience of playing hide-and-seek in kindergarten. By actively crossing the white blank, they fill in the narrative gap of the image, thereby achieving a unity between age-appropriate cognitive adaptation and artistic aesthetics.

4.2 Clear Expression in Narrative Simplification: Characters, Scenes, and Continuity

1) Character symbolization and image consistency

The primary task of narrative simplification is to help children quickly establish stable and coherent recognition of character subjects within the dynamic rhythm of page-turning reading; this is the basic premise for young children's understanding of picture book narratives. Children aged 3 to 6 years are in Piaget's preoperational stage. Their cognitive processing shows a pronounced tendency toward centration; they are easily attracted by prominent surface features, and their visual perceptual constancy has not yet fully matured. If picture book characters are accompanied across pages by complex clothing textures, extreme perspective angles, or frequent color changes, young children often find it difficult to move beyond these strong surface visual stimuli and cannot complete the constancy transformation of shape and size in cognition, ultimately leading to disruption in character identity recognition.

The classic picture book *The Very Hungry Snake* is a typical example of this design approach. The protagonist is simplified into a pure oval head and a wavy linear body. Even when the snake swallows various foods and its body undergoes humorous transformations, this fixed symbolic form keeps its core visual paradigm highly consistent. This design method of stabilizing character symbols not only accords with the focused characteristics of young children's visual perception, helping them concentrate and follow the main storyline, but also builds a coherent visual schema through stable symbolic form and effectively reduces the narrative comprehension load caused by frequent page turns.

2) Scene refinement and functional treatment

In picture book narrative, the scene is the logical framework that guides the movement of focus. Complex and changing backgrounds easily create visual noise and distract young children's attention. Therefore, narrative simplification requires creators to perform functional filtering of scenes so that the compositions focus completely on the core plot.

In *Goodnight Moon*, the space is purified into a fixed green room. The opening panorama presents an inventory of objects, and subsequent close-ups gradually concentrate the focus, using the constancy of the scene to construct a safe functional framework for young children. When confronting complex local street-market themes, *The Morning Market in Lotus Town* demonstrates a strategy of functional scene reorganization. The creator does not reproduce every trivial detail of the Jiangnan water town, but uses white-space layout and expressive brushwork to condense the complex environment and draw the visual center of the image toward the core scene of the dock market. From the perspective of reception aesthetics, this pictorial refinement is in fact a condensation of the reader's visual focus. Through restrained and pure visual language, spatial scenes are transformed into pure narrative cues, thereby driving plot development more powerfully.

3) The logic of page connection and visual rhythm

As a dynamic medium activated by page turning, the picture book is essentially a translation of time into space. Children aged 3 to 6 years have not yet fully developed

intuitive thought, and sharp spatial-temporal jumps between page turns can easily cause gaps in story cognition.

In response, *Sam and Dave Dig a Hole* adopts a compositional strategy of structural repetition. Through the vertical action of digging and the recurring motif of narrowly missed diamonds, the book constructs a regular visual beat and transforms young children's cognitive anxiety about unknown page turns into reading expectation. *The Morning Market in Lotus Town* and *Hide-and-Seek* form a complementary relationship at the level of visual kinetic design. The former uses the extension of water flow and the movement of boats to establish horizontal kinetic cues; the latter uses large areas of white space as a basis and constructs a horizontal dynamic reading line through bidirectional gaze interaction. Together, the two works condense the complex Jiangnan street scene and the kindergarten activity space into regular visual kinetic symbols. By relying on formal principles such as repetition, contrast, and gradation to control the rhythm of page turning, designers conform to young children's cognitive tendency to symbolize real experience. Children are thus transformed from passive viewers of pictures into reading subjects who actively participate in narrative construction, spontaneously exploring and reconstructing the story through minimalist pictorial rhythms.

4.3 Micro-Level Application Demonstration and Age-Differentiated Dynamic Adjustment of Simplification Strategies

The preceding sections used classic Chinese and foreign cases to qualitatively deconstruct the micro-level design indicators of formal simplification and narrative simplification. In actual creation, however, formal simplification and narrative simplification do not exist in isolation; rather, they form a symbiotic and coordinated relationship. At the same time, because children aged 3 to 4 and 5 to 6 years differ developmentally in visual-spatial perception and attentional breadth, the degree of simplification also needs to be dynamically adjusted. Therefore, from an integrated formal-narrative perspective, this study constructs two sets of age-differentiated dynamic adjustment criteria based on the cognitive characteristics of children at different ages.

1) Age-differentiated dynamic adjustment criteria for visual simplification in picture book illustration for children aged 3–6

To further clarify the dynamic balance between formal simplification and narrative simplification in creation for different age groups, this study organizes the adjustment mechanisms of specific micro-level design indicators in Table 3.

Table 3. Dynamic adjustment criteria for visual simplification strategies in picture book illustration for children aged 3–4 and 5–6

First-level dimension	Secondary observation indicator	Extreme purification principle for ages 3–4 (early preoperational stage)	Structural reorganization principle for ages 5–6 (intuitive thought stage)
Formal simplification	Form simplification	Uses primary geometric forms such as circles and squares to represent objects. Removes or weakens surface textures such as hair and fur.	Allows the addition of moderate expressive lines and textural qualities, while still weakening trivial object details and emphasizing overall feature extraction.
	Color simplification	Strictly limits the palette to about three core color systems, completely abandons detailed light-and-shadow depiction, realistic gradients, and digital effects, and implements perceptual protection.	Allows a moderate increase in hue, but must clarify spatial structure through the mechanism of large-block contrast between cool and warm tones and between light and dark, with small focal points.
	Composition simplification	Uses a pure white background or large areas of plain layout to create a minimalist visual field and remove environmental impurities.	Uses block-based object layouts and dynamic lines of gaze flow to organize smooth and clear reading movement within complex scenes.
Narrative simplification	Character symbolization	Maintains strong consistency in the character's contour and color across page turns to prevent identity tracking from being interrupted by breaks in perceptual constancy.	Keeps core identifying labels constant while allowing characters to undergo more dramatic deformation and action extension in response to the plot.

First-level dimension	Secondary observation indicator	Extreme purification principle for ages 3–4 (early preoperational stage)	Structural reorganization principle for ages 5–6 (intuitive thought stage)
	Scene functionalization	Keeps the scene almost fixed or completely hidden, thoroughly removing environmental visual processing load and multidimensional cognitive obstacles.	Allows large-scale scenes to appear, but the environment must be subjectively simplified so that the background sheds redundant decoration and becomes a functional framework serving the narrative.
	Page continuity	Minimizes spatial-temporal jumps between page turns and relies on regular visual beats to avoid spatial-temporal breaks and psychological discomfort.	Uses extended symbols such as gaze, water flow, and paths to regulate page-turning rhythm and transform visual white space into aesthetic expectation for active completion.

5. Application Model of Simplification Strategies

Simplification strategies do not exist in isolation; rather, they constitute a systematic mode of thinking that runs through the entire creative process. Based on the preceding deconstruction of the dual indicators of formal and narrative simplification, this study systematically organized and modeled specific design methods, thereby deriving an application model of visual simplification strategies across the entire process of conception, drawing, and layout (see Figure 7). To translate this simplification strategy model into concrete guidance for creative practice and clarify the points of intervention for formal and narrative simplification in actual projects, this study proposes the following three-stage practical guidelines for picture book illustrators creating for children aged 3 to 6 years.

At the conception stage, creators need to introduce visual simplification principles at the cognitive source, with the establishment of a core framework as the fundamental orientation. First, creators should establish a clear narrative focus. Creators should streamline complex narrative branches and avoid multilinear narration, thereby refining an extremely simple core plot and lowering the cognitive processing threshold for children in the preoperational stage. Second, creators must clarify character design. The beginning of the text should involve advanced planning of core identifying symbols, and these iconic symbols should remain highly consistent across page-turning visual effects to ensure continuity in narrative tracking. Third, the emotional tone should be regulated. At the early design stage, the dominant color tone should be determined, and a limited palette should be established to restrict the scale of color use. This restriction avoids the accumulation of complex or realistic gradients, thereby creating an emotional atmosphere while preventing visual information overload.

At the drawing stage, simplification strategies are primarily implemented through the formal translation of visual elements, with formal simplification as the core task. First, in the dimension of form simplification, creators should avoid exhaustive realistic representation, use geometric generalization to refine the forms of objects, further strengthen core features, and control the number of elements while concealing complex textures. This approach activates the Gestalt tendency toward perceptual completion. Second, in the dimension of color simplification, creators must restrict color within a limited range and coordinate main and secondary colors, ensuring that the color scheme focuses entirely on emotional expression and emphasis, clarifying the pictorial structure through cool-warm and light-dark contrasts. Finally, in the dimension of composition simplification, each page must feature a single and explicit visual focus and establish a clear reading path and page connection. At the same time, reasonable design white space should be retained in the picture to construct the appeal structure emphasized by reception aesthetics, precisely guiding children's attention and prompting them to actively develop plot-related associations.

At the final layout stage, creators should adopt a holistic, dynamic perspective and use the construction of narrative rhythm as a macro-level regulatory method. First, scene management should be deepened. Continuous, cross-page visual flow should keep elements stable, avoid illogical or drastic spatial jumps, and ensure a cohesive narrative

logic, thereby helping children quickly adapt, predict, and establish a clear story-cognition framework within a stable visual order. Second, continuity design should be strengthened. Through macro-level control of page-turning rhythm, children's reading expectations can be induced across page transitions by leveraging the blanks left by the image-text relationship on the preceding page and the predictable visual beat of the following page to form a coherent cross-page correspondence. Under the regulation of layout techniques such as repetition, contrast, and gradation, complex visual narratives are transformed into visual rhythms that children aged 3 to 6 years can easily follow, ultimately achieving a deep unity between age-appropriate cognitive adaptation and artistic aesthetics.

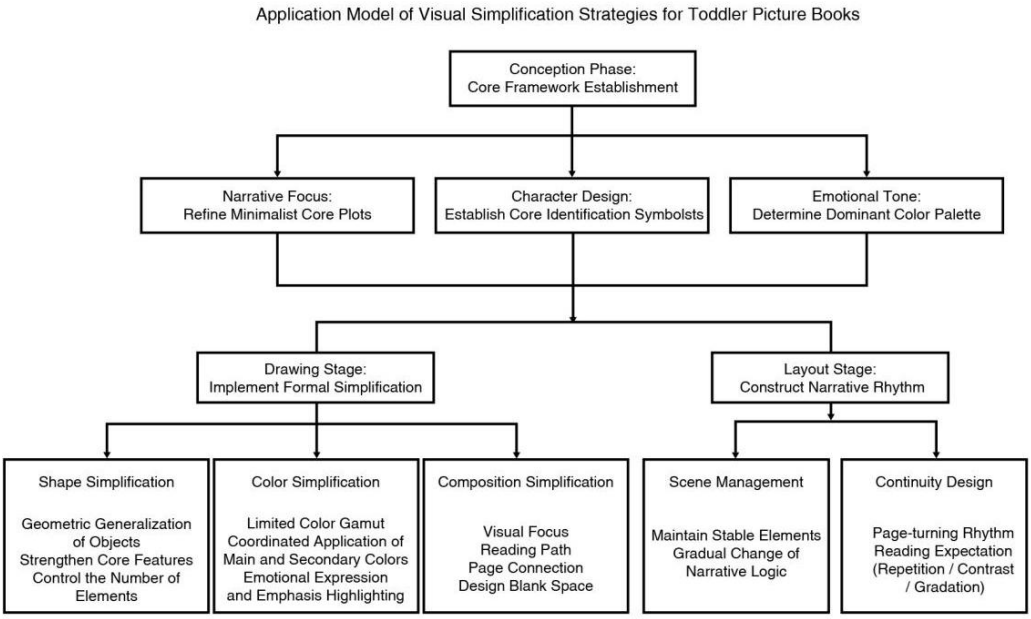


Figure 7. Application model of visual simplification strategies for young children's picture book illustration

6. Conclusion

In response to the practical problems of adult-perspective dominance and visual-element redundancy in original Chinese picture book illustration for young children, this study systematically constructed a visual simplification framework for picture book illustration for young children by drawing on the cognitive-developmental stages of children aged 3 to 6 years and integrating multidisciplinary theories. The study demonstrates that visual simplification is by no means the mechanical deletion of image information, but a child-centered transformation in design thinking. At the narrative level, creators can establish a stable story framework through character symbolization, scene refinement, and page continuity. At the formal level, they can reduce children's visual processing load and cognitive load through geometric reduction of form, precise control of the color range, and focused composition. The formal-narrative integrated simplification framework and the three-stage application model of conception, drawing, and layout constructed in this study not only enrich interdisciplinary theoretical research but also provide clear and operational practical guidance for original picture book creators in shifting toward a child-centered perspective.

Although this study contributes certain insights toward constructing a cross-culturally applicable strategy system, its findings remain limited by several constraints. First, the breadth and currency of the sample of original Chinese picture books still leave considerable room for improvement. In the face of the rapid growth of diverse creative subfields in recent years, such as new national style, mythological reconstruction, and healing narratives, the current sample size cannot provide comprehensive coverage. Second, the current research method mainly relies on qualitative theoretical derivation

and case deconstruction and lacks quantitative empirical data from target child readers. Given the unique and subjective nature of preschool children's cognitive processing in the preoperational stage, theoretical derivation alone cannot be fully equated with young children's embodied cognitive feedback in real reading environments. Consequently, an objective, quantitative evaluation mechanism for the proposed strategy framework still needs to be supplemented and improved.

In response to these research gaps, future studies should conduct in-depth inquiries along two dimensions: quantitative empirical research and thematic expansion. Researchers can also refine age-differentiated design criteria in accordance with the developmental differences between children aged 3 to 4 and 5 to 6 years, further promoting the deep integration of age-appropriate cognitive adaptation and artistic aesthetics.

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References

Arnheim, R. (1998). *Art and visual perception* (S. Teng & J. Zhu, Trans.). Sichuan People's Publishing House.

Feeney, S., Moravcik, E., & Nolte, S. (2019). *Who am I in the lives of children? An introduction to early childhood education* (9th ed.; X. Hong, X. Li, & X. Wang, Trans.; p. 122). The Commercial Press.

Galotti, K. (2017). *Cognitive psychology* (4th ed.; G. Wu et al., Trans.). China Machine Press.

Golomb, C. (2017). *The child's creation of a pictorial world* (S. Li, Trans.). China Light Industry Press.

Li, X. (2025). A study on the creation of children's picture books about Yan'an red culture based on image narrative (Master's thesis). Xi'an University of Technology. https://doi.org/10.27398/d.cnki.gxalu.2025.000602

Li, Y., Ma, Y., & Zhao, L. (2025). Innovative research on visual communication design under the concept of minimalism. *Screen Printing Industry*, (12), 75–77.

Lin, F. (2012). The zhiyin as the implied reader: A phenomenological interpretation of Liu Xie's theory of zhiyin. *World of Mass Literature*, (22), 36–37.

Liu, Q., & Zhang, Y. (2025). Value transmission from the perspective of reception aesthetics: A study on the construction of children's subjectivity in *Xiangbei's Journey*. *Literary Theory and Criticism*, (3), 153.

Matsui, T. (2017). *How to read picture books to children* (J. Lin, Trans.). Beijing United Publishing Co.

Matulka, D. I. (2017). *The picture book primer: Understanding and using picture books* (Z. Wang, Trans.; pp. 185, 187). Beijing United Publishing Co.

Montaigne, M. de. (2016). *On the education of children* (Z. Ma, Trans.). Shanghai People's Publishing House.

Nodelman, P. (2018). *Words about pictures: The narrative art of children's picture books* (Z. Chen, Trans.). Guizhou People's Publishing House.

Rousseau, J.-J. (2011). *Emile, or On education* (Z. Peng, Trans.). Shanghai People's Publishing House.

Santrock, J. W., Deater-Deckard, K., & Lansford, J. E. (2023). *Child development* (15th ed.; Q. Yu, Trans.). Beijing United Publishing Co.

Wang, L. (2024). *History, communication, response: The theoretical evolution of reception aesthetics* (p. 41). Peking University Press.

Wei, Y. (2026). Narrative strategies in *Nobody from Langlang Mountain* from the perspective of reception aesthetics. *Famous Writers and Works*, (8), 41–44.

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