



ARTIFICIAL INTELLIGENCE IN THE CREATION OF ILLUSTRATIONS FOR CHILDREN'S LITERATURE

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Abstract. *This study demonstrates that while AI tools can generate drafts and accelerate the process, illustrations still require careful prompting and significant manual refinement to achieve the compositional quality and emotional depth characteristic of human-made artwork.*

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Artificial intelligence tools (hereinafter – AI) are rapidly developing and spreading, and today its applications can be seen in many areas, including graphic design. Generative imaging services have become more accessible and easier to use, causing a massive proliferation of AI-generated illustrations that are already easily recognizable. The role of the designer is transformed: it acts rather as a «manager», while AI performs the function of a «assistant», which speeds up and optimizes the process of creating sketches or full-fledged images. At the same time, the results need to be modified, the level of which depends on a number of factors. This raises the question of whether this «link» extends to all categories or can be used only in part, especially narrow-focus images – illustrations for children`s literature [1].

In the children`s literature illustrations serve a crucial function: they help communicate the emotional atmosphere of a piece, bring characters to life, and make described objects feel tangible, acting as a link between the reader and the text. In children`s literature in particular, they contribute to shaping young personalities and guiding emotional growth. Pictures also capture children`s attention, especially for those who find it difficult to concentrate [2]. Over time, this gave rise to an entire artistic movement in which drawings became a form of interpretation, and illustrators were recognized as co-creators whose perspective carried equal weight to that of the author. With the appearance of artificial intelligence tools traditional approaches in creating children`s illustrations note significant transformations. AI brings both advantages and challenges to the field of illustration. On one side, it optimizes the processes of creating and editing images; on the other, it raises important concerns about contextual relevance, artistic integrity, copyright, and ethical responsibility. Also, it is clear that illustrations produced entirely by AI differ noticeably from those made by human artists. This issue is especially significant in the context of children`s literature. Illustrations in children`s books serve as a bridge between the child and the world, they combine "lively" images with modern trends and provide a wide range of artistic expressions. However, when generative services are used, these qualities can be compromised unless the prompts are carefully designed. Each request must take into account factors such as the child`s age group, the type and style of the book, language, and series format, while maintaining a consistent structure to ensure meaningful results [3, 4].



The task of this work is to understand whether generative services can be used in the process of creating children`s illustrations by means of creating a clear-structured prompt and analyze images created using different approaches.

The practical stage of this study began with creating illustrations for a children`s textbook, part of a larger series with predefined stylistic requirements and the author`s preferences. Key factors emerged: the textbook is for children aged 6-8 years, images must be black and white, and should combine coloring with infographic elements to support both visual memory and motor skills. The drawings need to be simple, easily recognizable, and presented in two styles – realistic for quick association with real objects, and “doodle/cartoon” to evoke positive emotions. Ultimately, the illustrations were designed to be black-and-white, interactive, and stylistically balanced between realism and playful doodle elements. Several were produced in Adobe Illustrator and compared with AI-generated versions.

The next step was to select the models of artificial intelligence services that would be used in this phase of research. Artificial intelligence can be divided into three main types: generative, analytical, and perceptive. Generative AI creates new content such as text, images, audio, or 3D objects. Analytical AI focuses on studying existing data to uncover patterns, while perceptive AI enables machines to interpret their surroundings through vision and sound. Generative AI itself has several layers of classification. It can be grouped by the type of content it produces – language models that generate text, visual models that create images or videos, audio models for speech and sound, and spatial models for 3D worlds. Another distinction lies in autonomy: some systems respond only to prompts, while others act more independently as agents. Finally, generative AI can be designed for general use or specialized tasks. For the visual system, the study used the online platform Leonardo.ai, while the chosen LLM tool was Nano Banana 2, treated as a separate component despite being available within Leonardo. The main distinction lies in their roles: Leonardo functions like a professional studio with extensive customization, while Nano Banana 2 acts more like a quick assistant offering fast results. Although Leonardo provides richer interface options, both tools were selected because the illustrations required were simple – black-and-white, combining coloring with infographic elements, and styled in cartoon or doodle form.

To achieve accurate outputs, prompts had to be carefully engineered to restrict the system`s creative freedom and define clear technical parameters [5]. The structure included six parts, each of which is responsible for a certain parameter. First comes the goal, which defines the format – specifies vector image type with clear borders and empty spaces. Second is the removal of unnecessary elements, meaning no backgrounds or extra details. Third sets the style and technical parameters. Fourth defines a single object precisely. Fifth describes geometry, with rounded, minimal shapes and smooth corners to keep the design simple. Sixth controls complexity, avoiding intricate details and keeping doodle simplicity. Altogether, the design follows this sequence: goal, constraints, style, subject, geometry, and detail control, forming a unified visual code for the illustrations.



Using a created prompt, a series of illustrations were created and analyzed, after which some conclusions were made. Both produced contour-style drawings, confirming the prompt structure, but Nano Banana 2 tended toward childlike, cartoonish designs with extra internal details or unnatural features. Leonardo.ai, by contrast, delivered cleaner lines, though at times overly simplified or inconsistently detailed, with occasional illogical curves and overlapping strokes. Shared drawbacks included inconsistent outputs for the same request, the need for detailed prompts to ensure realism, and occasional blending of elements – especially noticeable in Nano Banana 2. Compared with human-made illustrations, the AI versions lacked compositional logic, symmetry, and the polished finish of professional work. While useful as drafts or starting points, they require refinement – removing unnecessary elements, adjusting outlines, and correcting structural inaccuracies – to reach the quality of finalized illustrations.

In conclusion, both tools confirm that AI can act as a helpful assistant in creating initial draft and AI-generated images can serve as sketches or bases for further work, but substantial manual revisions are necessary, and the time required depends on the desired style and level of detail.

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