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### CHILDREN`S BOOK ILLUSTRATION AND INTERACTIVE TECHNOLOGY

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**Abstract.** *The paper considers ways to combine multimedia technologies with children's book illustration, namely:*

- 1. Animation of illustrations or its parts,*
- 2. sound effects that are activated when interacting with the illustration,*
- 3. integration of AR-technologies,*
- 4. Adding mini-games to book applications.*

*It was found that the inclusion of interactive technologies can be used to create new art forms, encourage learning or draw the attention of the readers to existing works of literature through a new, interactive form. It is established that children's illustration under the influence of design trends and mass culture acquires signs of animation, simplified, symbolic forms.*

According to Encyclopaedia Britannica, interactive media (multimedia) is any electronic system on digital device that allows the user to control, combine and manipulate different types of information, such as text, sound, video, computer graphics and animation. Therefore, the user does not perceive the information passively, but interacts with it as an active participant [1]. These technologies are widely used in various areas of human life, including literature that has traditionally existed separately from the computer. While the use of e-books has already gained considerable popularity, the possibilities of active interaction of the reader with the elements of illustration and text are still being explored. By their nature, interactive books are most suitable for children, because the process of reading them takes on a playful form. Thus, the integration of multimedia technologies has a direct impact on the development of children's books and children's book illustrations. The purpose

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of this work is to examine the impact of multimedia technologies on the development of the art of illustration, in particular - children's book illustration.

It is known that illustration in children's literature has many functions. It simultaneously is a means of visualization of literary images and symbols from the book, it regulates the rhythm of reading, helps to focus the reader's attention and influences the formation of aesthetic tastes of the child [2]. As an integral part of the printed book, the illustration also complements electronic editions (for example, ebook "36 and 6 companion cats" by Galina Vdovichenko; book application "PopOut! The Tale of Peter Rabbit: A Pop-up Story" based on the works of Beatrix Potter ; book application "Kotigoroshko" by KievSeaPirates with illustrations by Ivan Sulima). The example of the last two book applications shows how the digital format of publications opens up a number of new creative opportunities for designers: pictures move, have sound effects, and so on. The Bookful application supports AR (augmented reality) technology, which gives the impression that 3D models of characters and book locations are in the real world. Another app, Fairy Tales ~ Children's Books, Stories and Games, combines classic fairy tales, animated illustrations and mini-games to develop logic and motor skills. In such conditions, the reading process changes, ceasing to be only the reader's work with the text. Instead, it is a comprehensive experience involving many senses, which helps to focus the reader's attention as much as possible.

Interactive technologies play an important part in education and training, as they enrich the learning process by providing a more complete perception of information than text. According to a Norwegian study, the level of interactivity of learning has a direct impact on the development of students' cognitive skills and information acquisition; moreover, the quality of information supply and students' interaction with it is more important for learning results than the information itself [3]. Another 2016 study in Canada found that children can memorize facts using an interactive application with the same success as when communicating with a real life teacher [4]. While educational programs are gradually moving to interactive methods, illustration is also changing and becoming more widespread: images are now found not only in textbooks and on school stands, but also on interactive school boards, smartphones, tablets and more. Illustration can easily explain both physical features, the structure of objects, and scientific theories, abstract, philosophical ideas; therefore, effective and interactive learning is impossible without illustration.

From an artistic point of view, the combination of illustration with interactive technologies means that a team of developers is involved in the process of creating a project, where each of members is responsible for a specific area of design. Due to the variety of creative possibilities, visual interactive art acquires a large number of forms, among which one of the most common is the form of a game. Video games are, first of all, a way to tell a story through the direct active participation of the player, which unveils the plot of the work by performing various tasks and completing levels. There are many genres of video games, and all of them make extensive use of illustrations, from the preliminary sketches of the characters and locations to advertising posters of the finished product. In the most traditional sense, illustration appears in projects made in 2D graphics style. A striking example is visual novels, where text and two-dimensional images are the main focus. The player often has the opportunity to choose how the plot will turn out and what will be the ending of the game. Unlike traditional fiction, which is complete without illustrations, a visual novel cannot be divided into text and images without loss of quality. Increasingly, graphic designers are turning to interactivity tools, especially in website design, because it allows users to be more engaged with the website. A striking example is the BrightMedia website [5]. It is worth mentioning that technology is constantly evolving, and new creative forms are being developed, so it is almost impossible to fully

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describe all manifestations of art, including interactive ones. Thus, interactive art can exist as a tool to achieve a certain goal (for example, learning), or be an end in itself.

Among the interactive books, the most common type are textbooks for pupils and students. The interactive fiction book industry is also evolving, designed to be co-read by children and their parents, but a 2012 U.S. study found that many parents are skeptical of reading to their children from a tablet, preferring traditional paper books. It is important to note that the interactive elements of such books are perceived differently by children. For example, highlighted words that a reader can click to hear the pronunciations of, in most cases help the child memorize words, but picture animations and other decorative interactive parts of the application are more likely to distract from reading [6]. To understand parents' ambiguous perception of interactive e-books, it is necessary to take into account that when working with children, they often prefer proven methods to prevent risks. In order for reading interactive books to become a common practice, it is necessary for such books to prove their effectiveness over a significant period of time.

In the digital age, when Internet usage takes up much more of a person's life than reading paper books, integration of multimedia technology into children's literature is a way to increase its relevance. Book designs, including illustrations, are adapted to the preferences of modern people. Today, children's illustration is not limited in style; almost every book has a bright, unique design, although a visible impact of animation and gaming industries can be traced. Increasingly, there appear children's books based on movies, cartoons, and especially in recent years, on video games. Among the techniques, digital illustration is the most common, because the processing of such images in modern conditions is easier, but many books are decorated with traditional means. Digital illustrations that mimic traditional material, such as watercolor, are not uncommon. In children's books design there is noticeable tendency of graphic design in general to simplify forms; symbolic depiction of the heroes and their surroundings. In general, new approaches in creating a children's book can be considered a logical step in the development of the information environment. As noted in the article "The relationship between the design of children's e-books and animation art in China", the child's introduction to technology helps to adapt to the information environment of the modern world, which is a necessary condition for successful living in it [7].

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