

## THE IMPACT OF THE DIGITAL ENVIRONMENT ON THE EMOTIONAL DEVELOPMENT OF CHILDREN WITH AUTISM SPECTRUM DISORDER

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**Abstract.** *This article examines the impact of the digital environment on the emotional development of children with Autism Spectrum Disorder (ASD). The study is based on the specific characteristics of information processing in children with autism, particularly the predominance of visual-perceptual abilities over verbal communication. The potential of digital technologies - such as interactive games, video modeling, and visual simulations - in enhancing emotional intelligence is explored. Special attention is given to the structured and predictable nature of the digital environment, which can function as a “safe space” for children with ASD. The article highlights the ambivalent nature of digital technologies by analyzing both their positive effects (social adaptation, alternative communication, and cognitive development) and negative impacts (dopamine dependency, sensory overload, and reduced real-life social interaction). Based on the analysis, practical and pedagogical recommendations for the effective and controlled use of digital tools are proposed. The findings suggest that, when properly structured and guided, digital environments can serve as a powerful tool for supporting the emotional and social development of children with ASD.*

**Keywords.** *Autism Spectrum Disorder (ASD), emotional development, emotional intelligence, digital technologies, visual perception, video modeling, visual simulation, gamification, sensory sensitivity, alternative communication (AAC), social adaptation, cognitive development, digital environment, pedagogical approach.*

**The Role of Digital Technologies in the Emotional Development of Children with Autism Spectrum Disorder.** In modern education and upbringing systems,

digital technologies are becoming increasingly important. Particularly, the role of the digital environment is highly significant in working with children with Autism Spectrum Disorder (ASD). Children with ASD often demonstrate stronger visual-perceptual abilities compared to language-based communication. Therefore, they perceive information more effectively through images, colors, shapes, and movement.

Scientific studies indicate that children with autism tend to have relatively stronger visual information processing systems, which provides them with an advantage in adapting to digital environments. At the same time, digital technologies can have a dual impact - both positive and negative - on their emotional development.

The development of emotional intelligence (EQ) in children with ASD is often complex due to several challenges:

- ❖ difficulties in understanding others' emotions;
- ❖ limited ability to interpret facial expressions (mimics);
- ❖ challenges in regulating their own emotions.

The digital environment can serve as a compensatory tool for these difficulties. In particular, visually based platforms present emotions in simplified forms. This process is described in scientific literature as “emotional visualization.” Technologies within the field of *affective computing* allow the analysis of a child's facial expressions and provide real-time feedback. This contributes to the development of:

- self-awareness;
- emotional regulation;
- adaptation to emotional situations.

Due to heightened sensory sensitivity in children with ASD, real social environments often become sources of stress. From this perspective, virtual simulations play an important role as safe learning environments.

Visual simulation provides the following opportunities:

- learning social situations in advance (e.g., visiting a store, using public transport);
- gradual exposure to controlled levels of stress;
- preparation for unpredictable situations.

Video Modeling is considered a particularly effective method. In this approach, a child observes appropriate social behaviors through video and later imitates them. Research shows that visually acquired information is retained longer in working memory and is more easily integrated into behavior.

Children with ASD may also experience low cognitive flexibility, meaning they have difficulty transitioning between activities. Interactive educational programs help mitigate this issue.

Gamification influences development through the following mechanisms:

- ❖ increasing motivation through immediate reward systems;
- ❖ stabilizing attention;
- ❖ enhancing problem-solving skills.

This process activates the dopaminergic system, which strengthens learning. However, if not properly managed, it may lead to dependency.

Digital technologies, therefore, represent both opportunities and risks for children with ASD.

#### **Negative effects:**

- 1. Dopamine dependency** - Rapid reward systems may reduce interest in everyday real-life activities.
- 2. Sensory overload** – Fast - changing visual and auditory stimuli can overstimulate the nervous system, leading to emotional outbursts (meltdowns).
- 3. Reduced social interaction** - Interaction with screens may partially replace real human communication, slowing the development of social skills.

#### **Positive effects:**

- 1. Alternative communication (AAC)** - Specialized applications enable non-verbal children to communicate effectively.
- 2. Development of individual interests** - Digital platforms expand narrow interests into meaningful knowledge.
- 3. Structured environment** - Predictable and logical digital systems create a sense of safety for the child.

#### **Practical recommendations:**

- ❖ **“First-Then” approach** - visually presenting the sequence of activities;
- ❖ **Content selection** - prioritizing calm and logically structured programs;
- ❖ **Advance warning** - preparing the child before ending an activity;

- ❖ **Time regulation** - ~~strictly~~ controlling screen time;
- ❖ **Co-viewing** - engaging with digital content together with adults.

**Conclusion.** Thus, the digital environment is an important yet complex factor in the development of children with Autism Spectrum Disorder. When properly structured, it can effectively support emotional and cognitive development. However, uncontrolled and excessive use may lead to negative consequences. Therefore, the use of digital technologies should be carefully guided in terms of content, duration, and pedagogical purpose. Only under these conditions can digital tools serve as a “bridge” that facilitates social adaptation for children with ASD.

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