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THE PHENOMENON OF CLIP (FRAGMENTARY) THINKING IN THE DIGITAL AGE: COGNITIVE CHANGES AND CHALLENGES IN EDUCATION

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Abstract This article explores the phenomenon of «clip thinking» emerging among youth under the influence of digital technologies and social media. According to the empirical study involving 80 respondents, 88.75% of adolescents exhibit moderate to high levels of clip thinking. The article analyzes the neurophysiological mechanisms (dopamine loop) of this condition and its impact on the educational process, proposing adaptive pedagogical solutions such as «micro-learning» and visualization.

Keywords: clip thinking, digital addiction, Generation Z, dopamine, attention deficit, cognitive psychology, teaching methodology.

1. Introduction

The 21st century was marked not only by technological breakthroughs but also by fundamental changes in human cognitive processes. The rapid development of the internet and social media has transformed the way we perceive and process information. In the mid-1990s, philosopher F.I. Girenok coined the term "clip thinking," which refers to the tendency to perceive the world through short, vivid images (fragments) that follow one another without logical connection [1].

The relevance of this topic is due to the global decline in attention span. While in 2000, the average human attention span was 12 seconds, by 2023 this figure had dropped to 8 seconds, which is shorter than that of a goldfish (9 seconds) [2]. Today's youth ("Generation Z") live in an environment of excessive information noise, where short-form video platforms such as TikTok, Instagram Reels, and YouTube Shorts are fostering a habit of rapid information consumption.

The aim of this study is to examine the prevalence of clip-based thinking among adolescents in Uzbekistan, analyze its neurophysiological foundations, and develop recommendations for adapting the educational process to new cognitive realities.

2. Methods

To achieve this goal, an empirical study was conducted combining quantitative and qualitative analysis.

Study Participants: 80 students aged 14 to 16 from secondary schools in Andijan participated in the study. The sample was randomly selected and included 42 boys (52.5%) and 38 girls (47.5%).

Instrumentation: To assess clip-based thinking, an adapted method based on L.M. Gromova's questionnaire was used, modified to account for modern digital realities [3]. The questionnaire consisted of 20 statements rated on a 3-point scale (3 - "always," 2 - "sometimes," 1 - "never"). The questions were grouped according to five key indicators:

1. Ability to concentrate for long periods of time.

2. Preference for visual information over text.

3. Multitasking skills.

4. Depth of information analysis.

5. Emotional dependence on gadgets.

Analysis procedure: The results were interpreted on the following scale:

• 20–29 points: Low level (predominance of deep conceptual thinking).

• 30–44 points: Average level (mixed thinking).

• 45–60 points: High level (pronounced fragmented thinking).

3. Results

The analysis of the obtained data confirmed the hypothesis of the predominance of fragmented thinking among modern teenagers.

Overall distribution of thinking levels: The survey results revealed the following:

• **High level of fragmented thinking:** detected in 33 respondents (41.25%). These students experience significant difficulty reading long texts and concentrating on a single task for more than 10–15 minutes.

• **Average level:** recorded in 38 respondents (47.5%). This group is able to switch between thinking modes but prefers fast-paced content. • Low level (analytical thinking): found in only 9 respondents (11.25%).

Thus, 88.75% of the adolescents surveyed exhibited some degree of clip-based thinking.

Gender Characteristics: Analysis of the results by gender revealed minor differences. High levels of clip-based thinking were more common among boys (45% versus 37% among girls), which may be due to their greater interest in dynamic video games. Girls more often demonstrated a moderate level (52%), indicating greater flexibility in their cognitive strategies.

Key Behavioral Markers: The study identified the following characteristics of respondents with high levels of clip-based thinking:

• **Visual dominance:** 85% of students noted that they absorb information better through videos or infographics than through text.

• **Superficial reading:** 72% of respondents admitted that when reading books, they "scan" the text, picking out key words, and often fail to understand the overall meaning. • Digital multitasking: 78% of students attempt to complete homework while messaging or watching videos, which, according to research, reduces productivity by 40% [4].

4. Discussion

These findings correlate with global trends and pose serious challenges for the education system.

Neurophysiological aspect: "Dopamine trap" Clip-based thinking is closely linked to the brain's reward system. Watching short entertaining videos (TikTok, Shorts) stimulates a rapid release of dopamine, a neurotransmitter responsible for pleasure. Unlike reading a book, where pleasure (dopamine) is delayed until the meaning is understood or the plot is completed, social media offers "instant gratification." This leads the brain, accustomed to easy stimuli, to begin to sabotage complex, effortful cognitive tasks [5]. Research shows that excessive consumption of such content can reduce activity in the prefrontal cortex, which is responsible for self-control and planning. Problems of Traditional Education: Modern schools, focused on linear delivery of information (45-minute lessons, long lectures), conflict with the cognitive characteristics of "digital natives." Teachers note that 68% of students lose interest in a lesson after just 15-20 minutes. This does not indicate a decline in student intelligence, but rather a change in the way they process information.

Adaptation Strategies: Instead of combating clip-based thinking, which is the brain's defensive reaction to information overload, it is advisable to utilize its characteristics in the educational process:

1. Micro-learning: Breaking up educational material into small, logically complete 10-15 minute chunks. This corresponds to current attention spans.

2. Data Visualization: Replacing text descriptions with infographics, mind maps, and short videos. The brain processes visual information 60,000 times faster than text [6]. 3. Gamification: Implementing game mechanics and quick reward systems for completed tasks to maintain motivation (dopamine).

4. Developing critical thinking: Teaching skills for filtering information

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