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PSYCHOLOGY OF DIGITAL FATIGUE AND ATTENTION DISTRACTION: CHANGES IN YOUNG PEOPLE'S COGNITIVE ABILITIES IN THE ERA OF SHORT VIDEOS

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Abstract: This article analyzes the psychological impact of the modern digital environment and the flow of short videos (TikTok, Instagram Reels, YouTube Shorts) on young people's cognitive processes — in particular, attention concentration and short-term memory. During the study, the neuropsychological mechanisms of «clip thinking» and the «dopamine trap» were examined based on scientific sources as well as the results of an empirical survey conducted among students, and practical recommendations for preventing digital fatigue and restoring cognitive resources («dopamine detox») were developed.

Keywords: digital fatigue, attention distraction, clip thinking, dopamine trap, short-term memory, cognitive abilities, dopamine detox.

Introduction. At a time when modern information technologies have become an integral part of our lives, the time the younger generation spends on smartphones and social networks is rising sharply. According to analyses, today young people in Uzbekistan direct their attention to a smartphone screen for an average of 4 to 6 hours a day. In particular, while this indicator is 3–5 hours for schoolchildren aged 12–17, among students and active youth aged 18–25 it reaches up to 5–7 hours a day. These figures are also at nearly the same level as the global average (4.5–5.5 hours) in DataReportal global reports.

Notably, 60–70 percent of the time spent goes to social networks and messengers (Telegram, Instagram, YouTube), and another 20 percent falls specifically on short videos (Reels, Shorts) and entertainment content. At first glance, this may seem to increase the speed of obtaining information, yet from the standpoint of psychology and media theory, the continuous and rapid saturation of the brain with a stream of information gives rise to serious cognitive problems such as «digital fatigue» and attention distraction [1; 6]. The aim of this article is to analyze on a scientific-empirical basis the psychological impact of short content and excessive screen time on young people's attention and memory.

Main part. In the modern digital environment, the way the human brain processes information is fundamentally changing. In psychology and philosophy, this phenomenon is explained by the term «clip thinking» (in English clip thinking, in Russian клиповое мышление) [5]. Clip thinking is the characteristic of perceiving information not as a single coherent logical system, but as a stream consisting of short, disjointed, rapid, and vivid fragments («clips»). Formed under the influence of social networks (TikTok, Instagram Reels, YouTube Shorts) and fast news feeds, this mode of perception directly affects young people's cognitive processes.

According to psychological observations, the following main signs are clearly manifested in individuals with clip thinking:

- **Rapid distraction of attention:** inability to concentrate for a long time on one topic or a large text;

- **Visual dominance:** perceiving images, short videos, memes, or infographics faster and more easily than reading text;
- **Rapid and emotional reaction:** reacting emotionally right away without deeply analyzing information (pressing «like» or scrolling past to the next video);
- **Superficiality in perceiving information:** difficulty connecting and remembering complex and long logical chains.

Of course, clip thinking cannot be assessed as an exclusively negative phenomenon. It also has positive aspects as an adaptation mechanism to the information environment: for example, orienting oneself quickly in a large stream of information, performing several tasks at the same time (multitasking), and adapting rapidly to changing conditions are among them. However, from the perspective of education and scholarly activity, its negative consequences are much more serious. In particular, as American researcher Nicholas Carr noted, consuming the internet and fast content weakens the brain's neural pathways for deep reading and critical analysis, resulting in greater difficulty reading long books or academic texts and preventing acquired knowledge from being retained long-term in memory [1].

Underlying the formation of short videos and clip thinking is a neuropsychological phenomenon — the «dopamine trap» [3]. The dopamine trap is a condition in which the brain becomes accustomed to rapid and easy sources of dopamine, the pleasure and reward neurotransmitter, and as a result a person becomes unable to enjoy simple, beneficial, yet labor-intensive types of activity. Short videos draw the brain into this trap in four stages:

- **1. The «variable reward» mechanism (Casino effect):** every time the feed is refreshed, it is impossible to predict in advance whether the next video will turn out interesting or boring. As Adam Alter showed in his research, dopamine is produced most actively in the brain precisely during the process of awaiting an unexpected reward — like pulling the lever of a slot machine, this keeps the brain in a state of constant interest [4].
- **2. A stream of rapid and «cheap» dopamine:** when reading a book, exercising, or preparing lessons, the brain obtains dopamine slowly and at the cost of mental effort. In short videos, however, ready-made emotion is obtained within 15–60 seconds without expending any effort. The brain chooses the path of getting pleasure as fast as possible while expending the least energy.
- **3. Desensitization of dopamine receptors (Tolerance):** as Stanford University professor Anna Lembke noted, the more a continuous and strong stream of dopamine arrives, the more the brain lowers receptor sensitivity to protect itself from overload [3]. Consequently, previous videos no longer seem interesting, while important daily tasks (studying, work, live communication) begin to seem extremely boring and arduous.
- **4. Consolidation of clip thinking:** caught in the dopamine trap, the brain rejects any information requiring long-term attention, and the individual becomes a bearer of clip thinking capable of digesting only short, vivid fragments [5].

This process first and foremost fragments attention concentration. Because of a new plot, unexpected sound, and changing image every 15–30 seconds, sustained attention is lost, and a person cannot direct continuous focus at one object (for example, a book or a lecture) for 10–15 minutes. According to empirical studies by cognitive psychologist Gloria Mark, as a result of digital distraction (fragmentation), after being distracted from one task it takes an average of 15–20 minutes to return fully to the previous level of attention [2]. At the same time, «volitional (voluntary) attention» weakens in the individual, so they avoid complex tasks they must force themselves to perform and shift to perceiving only light content that is interesting on its own («involuntary attention»).

In addition, digital fatigue also sharply reduces the capacity of short-term (working) memory. Short-term memory serves as a bridge to hold information at the moment and transfer it to long-term memory. However, when watching short videos in succession, proactive and retroactive inhibition occurs: each new clip displaces the trace of the previous clip in the brain, so that not a single one of the dozens of videos watched 10 minutes earlier can be clearly recalled. At the same time, for information to be imprinted into long-term memory (consolidation), the brain needs quiet and time for analysis. A relentless stream of information blocks this process and narrows working memory capacity, making it harder to link complex logical chains together.

Table 1. Comparative analysis of healthy (linear) thinking and clip thinking

Indicators	**Healthy (linear) thinking**	**Clip thinking and the dopamine trap**
Attention duration	40–60 minutes of continuous focus	Boredom after 15–60 seconds
Memory mechanism	Analyzing information and storing it in long-term memory	Viewing information superficially and forgetting immediately
Connecting information	Building a cause-and-effect chain	Separate facts unconnected to one another

Practical analysis and research results. In order to test theoretical conclusions practically, an anonymous psychological survey was conducted among 1st-year students of Andijan State University (n=26). During the study, students' daily time spent on short videos, attention stability, short-term memory indicators, and signs of digital fatigue were examined.

According to the survey results, while 62 percent (16 participants) stated that they spend less than 1 hour a day on short videos, 38 percent (10 participants) noted that every day they spend from 1 hour to 3 hours (19%) and more than 3 hours (19%) on platforms such as TikTok, Reels, and Shorts. Regarding watching a book or a 20-minute long educational video without getting distracted, 73 percent (19 students) said they manage this easily, whereas every fourth respondent — that is, 27 percent (7 students) — admitted that their attention splits and they struggle (12%) or cannot make it to the end (15%).

When the impact on memory and academic activity was analyzed, after 15 minutes of short videos, 27 percent (7 students) stated that they remember only 1–2 videos (19%) or can remember almost none of them (8%). The most notable result appeared on the question related to study and work efficiency: more than half of the respondents — 56 percent (14 participants; of whom 48 percent said «sometimes» and 8 percent «I get tired and bored quickly») — confirmed that on days when they watch many short videos, concentrating on preparing lessons becomes difficult. Likewise, among 37 percent of participants (9 individuals), signs of digital fatigue such as headache and eye strain (29%) as well as unexplained irritability and a feeling of inner emptiness (8%) were observed after prolonged content consumption.

Table 2. Results of the psychological survey conducted among students

Research indicators	**Distribution of dominant responses**	**Psychological interpretation**

1. Daily time on short videos (n=26)	Less than 1 hour — 62% (16); 1–3 hours and more — 38% (10)	38 percent of students have a high inclination toward short content.
2. Focusing attention on a long text/video (n=26)	Easily — 73% (19); Gets distracted/doesn't finish — 27% (7)	Fragmentation of sustained attention is observed in every fourth student.
3. State of short-term memory (n=26)	Remembers all — 73% (19); 1–2 or forgets — 27% (7)	«Washing out» of information was identified in 27 percent of respondents.
4. Difficulty concentrating in class and work (n=25)	Sometimes/gets tired quickly — 56% (14); Does not affect — 44% (11)	The majority (56%) notice a drop in volitional attention after short content.
5. Signs of digital fatigue (n=24)	Eye strain/irritability — 37% (9); Notices no change — 63% (15)	Clear exhaustion is present in 37 percent; tolerance (habituation) has formed in 63 percent.

Conclusion and practical recommendations. In conclusion, while the flow of short videos and clip thinking increases young people's ability to perceive information rapidly, they pose a serious threat to deep analytical thinking, sustained attention, and working memory efficiency. Empirical research results showed that more than half of students (56%) feel it becomes harder to concentrate in study and work activities after consuming short content, yet many do not notice digital fatigue in time due to dopamine tolerance.

In order to prevent this problem and restore cognitive resources, it is recommended to apply the following practical measures: first, to introduce the practice of a «dopamine detox» — that is, for at least 1–2 hours a day (or one day a week) giving up the phone and short videos completely and engaging in activities that provide «slow dopamine» (walking, reading paper books, sports, live communication) [3]; second, to reduce attention fragmentation during study and work by turning off smartphone notifications [2]; third, daily screen time should be controlled and using digital devices should be stopped at least 1 hour before sleep.

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