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Digital Behavioral Culture in the Contemporary Information Society

Abstract

This article examines the transformative impact of digital technologies on contemporary society, with particular attention to the formation of digital behavioral culture in a globalized socio-cultural environment. It analyzes the growing role of digital communication, artificial intelligence, and online interaction practices, while identifying key directions in the development of digital culture. The study highlights that digital footprints and digital shadows may pose significant risks to information security, thereby underscoring the need for systematic education on responsible use of online resources. The findings emphasize that the formation of digital culture should be regarded not only as a technical requirement, but also as an essential pedagogical and socio-ethical task in the digital age.

Keywords: *Digital Culture, Digital Footprint, Artificial İntelligence, Online Communication, Behavioral Culture, İnformation Security*

Dijital Davranış Kültürü ve Günümüz Bilgi Toplumu

Öz

Bu makale, dijital teknolojilerin çağdaş toplum üzerindeki dönüştürücü etkisini incelemekte ve küreselleşen sosyo-kültürel ortamda dijital davranış kültürünün oluşumuna özel bir vurgu yapmaktadır. Çalışmada dijital iletişimin, yapay zekânın ve çevrimiçi etkileşim pratiklerinin artan rolü analiz edilmekte; dijital kültürün gelişiminde ortaya çıkan temel yönelimler belirlenmektedir. Araştırma, dijital ayak izleri ve dijital gölgelerin bilgi güvenliği açısından önemli riskler oluşturabileceğini vurgulamakta ve çevrim içi kaynakların sorumlu kullanımına yönelik sistematik eğitimin gerekliliğini ortaya koymaktadır. Bulgular, dijital kültürün oluşumunun yalnızca teknik bir zorunluluk değil, aynı zamanda dijital çağda pedagojik ve sosyo-etik bir görev olarak ele alınması gerektiğini ifade etmektedir.

Anahtar Kelimeler: *Dijital Kültür, Dijital Ayak İzi, Yapay Zekâ, Çevrim İçi İletişim, Davranış Kültürü, Bilgi Güvenliği*

Introduction

Digital technologies and artificial intelligence are increasingly integrated into everyday human activity, becoming inseparable elements of modern life. Their rapid development has generated profound transformations not only in technological and economic domains but also within cultural value systems and behavioral models. As several researchers point out, the digital environment has reshaped traditional socio-cultural structures, fragmenting them into mosaic, pixel-based, and multifractal forms that reflect the complexity of contemporary digital interaction (Eyvazlı & Əskərova, 2025). These changes are reflected across multiple spheres — ranging from interpersonal communication practices to evolving conceptions of art, ethics, and social interaction. As digital tools continue to advance, they simultaneously gain greater appeal and influence over users' cognitive and social habits. In contemporary society, it is estimated that individuals spend nearly one-third of their waking activity in direct interaction with digital technologies, a substantial portion of which occurs within the Internet environment. Although approximate, these figures demonstrate a growing trend that continues to intensify each year. Such sustained engagement has resulted in noticeable shifts in the socio-cultural structures of human life, as the Internet functions not merely as a technical medium of communication but as a complex socio-cultural space. With the continuous expansion of information technologies, societies have been compelled to adopt new norms, regulations, and behavioral expectations — a process that has ultimately contributed to the emergence and consolidation of digital culture.

Digital Culture as a Transformative Dimension of Contemporary Society

The informatization of society has brought about the emergence of new technical and technological capacities, fundamentally reshaping the nature of human interaction. At the center of this transformation lies communication, which functions as the core structural element of the digital future. Emerging standards of interaction — including multimedia-based, hybrid, and non-verbal communication formats — illustrate the ways in which the perception and transmission of information are being redefined. The development of new artistic forms, such as multimedia art, further exemplifies the cultural impact of this shift.

Communication within virtual environments has become a concrete reality of modern culture, requiring individuals to possess competencies such as intentionality, creative thinking, and

the ability to distinguish between the physical and the virtual world. In this context, digital culture operates as a convergent form of contemporary knowledge, establishing new cultural norms aligned with the developmental trajectory of modern civilization. As a result, it has become an area of interdisciplinary concern, relevant both to the humanities and to specialists in information and communication technologies.

Having passed through its initial formative stages, digital culture has now reached a relatively stable level of development. French sociologist Jean Baudrillard identified these stages as follows:

*Transformation of human culture

*Production and dissemination of culture

*Simulation

*Simulative communication

Digital culture now functions as an integral component of general culture, oriented toward fulfilling society's growing informational needs. It represents not only the continuation of information culture but also its most advanced phase — a qualitatively distinct level characterized by the construction of a specific digital cultural environment.

One of the indicators of this emerging cultural structure is the distinct slang and symbolic system used in online communication. Memes, emojis, and other symbolic expressions have become essential elements of emotional representation in digital interaction. However, the sensory limitations of digital communication can lead to misinterpretations, as the absence of non-verbal cues — such as facial expressions, tone, and gesture — increases the likelihood of cognitive and emotional errors.

While interaction through social networks and face-to-face communication both remain vital, the concept of "friendship" in virtual space differs significantly from its traditional meaning (Əliyeva, 2013). The essence of communication lies in the transfer of information between living beings, yet digital environments frequently reduce this process to textual or symbolic exchange, weakening emotional reciprocity.

As digital communication expands, mutual empathy among individuals tends to decline, creating fertile conditions for manipulation, the spread of trolling, and other destructive online behaviors — especially among adolescents. This demonstrates that digitalization is not limited to

cultural transformation alone but also demands new approaches in the fields of digital ethics, digital security, and cultural regulation.

One of the most serious challenges faced by Internet users today concerns the protection of personal data. Personal data refers to any information that directly or indirectly identifies an individual and enables their recognition. The expansion of digital communication spaces therefore requires not only the formation of new cultural models but also the development of effective mechanisms to ensure informational and psychological security.

In the digital era, the widespread use of email services, social media platforms, and electronic government systems has resulted in the constant exchange and storage of personal data. Each interaction in the online environment — whether through website visits, account registrations, or the installation of applications — leaves behind informational traces commonly referred to as digital footprints.

A digital footprint is formed through a user's conscious activity on the Internet. These traces are preserved within digital systems for varying periods and expand proportionally to technological capacity. Individuals themselves contribute to the growth of their digital footprints, gradually shaping unique digital profiles. Digital traces may be categorized into two groups: passive footprints**,** consisting of automatically collected data, and active footprints**,** which arise from user-initiated actions such as online shopping or account creation. In many cases, users remain unaware of the extent of data being recorded and processed.

Closely related to this concept is the notion of a digital shadow**,** which refers to temporary informational traces left without the user's explicit awareness or consent (Rəcəbli, 2022). These traces include shopping histories, images captured by surveillance cameras, browsing records, and data extracted from mobile applications, including geolocation systems. Both digital footprints and digital shadows illustrate the deepening interaction between society and the digital sphere.

Social networks collect vast amounts of user-generated data, enabling the analysis and interpretation of behavioral patterns. For example, the number of online connections an individual maintains may serve as an indicator of social extroversion or introversion. Digital shadows may also expose personal preferences and behavioral tendencies, including vulnerability to harmful habits, which may influence employment decisions, credit evaluations, or interpersonal relationships.

Although data-processing algorithms have existed for decades, recent advances in computational power have significantly increased their analytical potential. However, even contemporary scientific research has not yet fully clarified how diverse data flows are integrated and transformed into predictive models.

Another important aspect of digital identity is the possibility for users to create one or more phantom identities**.** While the existence of multiple identities may reflect the diversity of an individual's interests, it also enables new forms of fraud and contributes to the expansion of the counterfeit digital economy (Sukhodolov, 2017). The cultural and security dimensions of both physical and digital environments are deeply interconnected. As technological systems evolve, new forms of interaction emerge to protect individuals from cybercrime and other digital threats. With the use of specialized software, it is now possible to obtain detailed information about a user's digital footprint or even gain unauthorized remote access to personal devices (Mehraliyeva & Mahammadli, 2025). Personal computing systems not only facilitate the statistical collection and analysis of data but also expand the possibilities of digital identification. Since digital tools and software products are the result of advanced intellectual activity, they tend to possess unique characteristics comparable to biological fingerprints.

Behavioral culture refers to the ethical norms, expectations, and socially accepted patterns of conduct that operate within a particular spatial and temporal context (Rzayeva & Mahammadli, 2025; Balayeva & Mahammadli, 2025). In the digital sphere, this includes both online etiquette (commonly referred to as *netiquette*) and the sequential behavioral models shaped by interface design, notification systems, and embedded data-tracking mechanisms.

The attention economy conceptualizes human attention as a monetizable resource. Digital platforms are intentionally designed to capture, retain, and market users' cognitive focus, prioritizing instant stimuli over sustained, reflective engagement (Lanier, 2018). The widespread expansion of this model has been analyzed extensively in recent scholarship, particularly in relation to its psychological and socio-cultural effects.

The large-scale extraction and commercialization of user data through predictive analytics has been defined as a system of surveillance capitalism**,** in which platforms not only anticipate but also influence behavioral patterns (Odell, 2019). This phenomenon has generated critical debates regarding its implications for autonomy, privacy, and democratic participation.

Algorithms responsible for search and recommendation processes shape digital experience by foregrounding specific information while suppressing alternative content. As a result, they often reproduce structural biases, generating cultural, national, and ethnic distortions (van Dijck, Poell & de Waal, 2018). These algorithmic practices are inseparable from the socio-economic conditions in which they are created and deployed, raising concerns about discriminatory dynamics in automated systems (Noble, 2018). The growing hegemonic influence of digital platforms over public life raises complex governance questions, particularly regarding the balance of power among the state, the market, and civil society. These concerns occupy a central position in contemporary research on platform societies.

Interface features such as notifications, like/dislike systems, infinite scrolling, and gamification techniques are intentionally designed to capture and redirect user attention (Newport, 2019). Through repeated exposure, such mechanisms automate behavioral responses and gradually reshape long-term cultural and cognitive habits.

Online platforms construct detailed user profiles by aggregating data derived from search histories, browsing activities, geolocation information, and device-based sensor tracking (Mammadov, Mahammadli & Karimov, 2025). These profiles enable predictive behavioral modeling and serve as the basis for targeted advertising strategies. In this process, human actions and cognitive focus are transformed into economic commodities.

The algorithmic architecture of platforms also amplifies collective influence. Viral content flows, trending labels, and mechanisms that quantify “visible popularity” actively shape user perception and group behavior. This dynamic may generate productive outcomes such as activism, but also contributes to harmful processes including large-scale disinformation (Aliyeva, İsmayılov & Mahammadli, 2025b).

Research has identified growing psychological and social consequences of these systems, including attention fragmentation, anxiety, isolation, performative communication, and reduced empathy (Aral, 2020). These tendencies are linked to the rise of superficial, reaction-based online interaction and have direct implications for personal well-being, professional productivity, and educational development (Aliyeva, İsmayılov & Mahammadli, 2025a).

Platforms that lack algorithmic balance exacerbate social polarization, create favorable conditions for disinformation, and weaken democratic processes (Zuboff, 2019). The transformation of the informational ecosystem through platform-based communication tools—

combined with contemporary forms of information warfare such as *likewar*—constitutes a growing threat to public security and informational integrity (Khalafova & Mahammadli, 2025). Behavioral patterns emerging in the digital sphere are reshaping consumer culture and transforming modes of cultural production. The monetization of creative content, the influencer-based economy, and attention-driven advertising models increasingly determine what and how individuals consume (Singer & Brooking, 2018). As digital culture evolves, individuals must become fully aware of the implications of their digital footprints and digital shadows. In the near future, university admissions committees and employers may evaluate applicants not only through traditional documents but also through their online activity and digital identity markers (Mammadov, 2022b; İsmayılov, Qasimli & Mahammadli, 2025). Even a preliminary analysis of a candidate's digital trace may reveal tendencies related to pedagogical aptitude or, conversely, a lack of willingness to engage in child-centered work. Empirical observations indicate that at the current stage of digital culture formation, many students remain insufficiently informed about online safety practices. As educational reforms continue, the expansion of digital space requires a corresponding increase in students' digital security awareness.

Moreover, every Internet user must understand concepts such as cyberwarfare and cybershadow, as well as their influence on both technological and social processes. In this context, knowledge of artificial intelligence has become essential, as AI now constitutes an integral element of digitalized human activity (Askerova & Mammadov, 2025; Mammadov, 2022a). Users need to recognize AI not merely as software, but as an intellectual system capable of performing cognitive operations such as speech recognition, learning, reasoning, and judgment.

When incorporated into educational environments—whether as interactive modules, adaptive systems, or game-based platforms—artificial intelligence can significantly reduce the likelihood of human error (Mammadov, 2013). This factor is especially critical not only for students preparing for professions involving risk to human life, but also for those entering fields that shape emotional and intellectual development from early childhood, most notably teaching. The strategic importance of such professions in a digitalized society has been strongly emphasized in current research (Eltemerov, 2021).

The emergence of the digital world reflects a broader societal shift in which a significant portion of human activity is transferred from the physical environment to the virtual sphere. Rising

external risks and increasingly demanding parental work schedules have contributed to substantial changes in the processes of children's socialization, education, and upbringing (Mammadov & Mahammadli, 2025; Bayramov & Məhəmmədli, 2025). In this context, it has become essential to cultivate an early awareness among younger generations regarding the nature and long-term consequences of their digital footprints. Adults, in turn, must assume responsibility for guiding children in understanding how their online behavior may shape future academic and professional opportunities. A lack of awareness of one's digital shadow today may result in serious obstacles during university admission or job recruitment processes in the future.

Researchers from multiple disciplines are now faced with complex and unprecedented tasks: examining the behavioral and cognitive characteristics of the emerging "digital childhood" generation, forecasting their long-term developmental transformations, and designing updated pedagogical approaches capable of responding to digital-era conditions. These efforts include the development of innovative psycho-pedagogical strategies, digital learning environments, and cultural adaptation mechanisms aimed at modernizing education in the age of ubiquitous technology. At the same time, the transformation of culture into mosaic, pixel and multifractal forms under the influence of digital technologies reveals that today's socio-cultural environment is no longer linear but fragmented and multi-layered, reshaping not only communication but also identity formation (Eyvazlı & Əskərova, 2025).

Conclusion

The development of competencies for functioning within the digital environment has become a crucial component of the pedagogical preparation of contemporary youth. Today, humanity exists within an endless and rapidly transforming flow of information, surrounded by social networks, media platforms, and commercial content. Young people, who spend significant amounts of time producing and sharing digital content, are no longer merely consumers but active co-creators of the digital sphere. Therefore, the formation of digital culture, alongside the ability to communicate responsibly within it, is of fundamental importance.

Understanding the relationship between digital literacy, personal data protection, digital footprint management, and information security is essential. Educators and psychologists face the challenge of identifying effective psycho-pedagogical strategies, modernizing instructional processes, and designing new educational approaches aligned with the realities of the digital age. Teachers, in particular, must equip students with the ability to use online resources responsibly and

consciously, protecting them from harmful digital traces and cyber-risks. This requires the introduction of updated educational models, methods, and formats that reflect current societal conditions.

Social media users are encouraged to reflect critically on the content they produce and share, as well as the platforms they engage with. All digital activity should comply with ethical and moral standards, since cultural norms—like all social structures—are continuously evolving. Digital culture, therefore, is not static; it is shaped by the interaction of multiple social groups and the dynamics between them.

The digitalization of culture and the widespread integration of artificial intelligence allow us to draw several key conclusions:

*Intercultural communication has expanded considerably through digital technologies and AI-based tools.

*Social media platforms and automated translation systems have facilitated interaction across linguistic and cultural boundaries.

*Digital art and AI-generated creativity have given rise to new artistic forms and aesthetic practices.

*The role of digital intelligence has contributed to the normalization of online communication as a primary mode of interaction.

*Metaverse environments and virtual reality technologies are reshaping intercultural experience and redefining social norms.

Modern digital behavior culture is shaped by the interplay between technological, economic, and socio-cultural forces. Platforms and algorithms not only observe human behavior but also monetize and influence it. While this dynamic creates new opportunities, it also produces risks for individual well-being, social cohesion, and democratic processes. For this reason, pedagogical, technological, and legal measures must be combined to establish a comprehensive framework. Ultimately, the cultivation of a healthy and responsible digital culture depends not only on the regulation of technology but also on the development of digital competencies among citizens. Education therefore becomes the key instrument for forming conscious, ethically oriented, and critically literate digital actors.

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