

Challenges and Opportunities for Preserving National Culture in the Digital Age

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Abstract: The digital age has brought about significant transformations in various aspects of society, including the preservation and dissemination of national culture. While digital technologies offer unprecedented opportunities for cultural exchange and documentation, they also pose challenges that threaten the integrity and authenticity of cultural heritage. This paper examines the multifaceted challenges and opportunities associated with preserving national culture in the digital era. It explores issues such as cultural homogenization, the role of digital technologies in cultural preservation, and the impact of globalization on cultural identities. The paper also discusses strategies for leveraging digital tools to safeguard and promote national culture, emphasizing the importance of a balanced approach that integrates traditional practices with modern technologies.

Key points: Digital Age, National Culture, Cultural Preservation, Globalization, Digital Technologies.

INTRODUCTION

The advent of digital technologies has revolutionized the way societies interact, communicate, and preserve cultural heritage. While these advancements have facilitated global connectivity and access to information, they have also introduced complexities in maintaining the uniqueness of national cultures. The proliferation of digital media and the dominance of global cultural narratives have led to concerns about cultural homogenization and the erosion of local traditions. This paper aims to critically analyze the challenges and opportunities presented by the digital age in preserving national culture, focusing on the interplay between technological advancements and cultural identity.

Challenges to Cultural Preservation in the Digital Age

Cultural Homogenization

Cultural homogenization refers to the process by which local cultures are absorbed and replaced by dominant global cultures, resulting in a loss of cultural diversity. In the digital age, this phenomenon has become increasingly evident due to the widespread influence of global media, social networking platforms, and transnational corporations. The accessibility of Western entertainment, fashion, consumer products, and language through digital technologies contributes significantly to the standardization of cultural practices across different societies.

One of the most vulnerable groups affected by this process is youth. Constant exposure to global trends—particularly via platforms such as Instagram, YouTube, Netflix, and TikTok—shapes their lifestyle preferences, language use, and value systems. As a result, traditional customs, languages, folklore, and community rituals often lose their relevance or are viewed as outdated. For instance, studies have shown a decline in the use of indigenous languages among younger generations who prefer to communicate in globally dominant languages such as English or Mandarin.

Furthermore, cultural homogenization is not merely a passive process; it is also driven by economic interests. Global media conglomerates and tech companies often prioritize content that appeals to the largest possible audience, thereby marginalizing niche or local cultural expressions. This trend poses a risk to cultural heritage, as unique forms of artistic expression, traditional knowledge, and oral histories may fade away due to lack of visibility or commercial value in digital spaces.

If left unaddressed, cultural homogenization can lead to a weakening of national identity and cultural self-esteem. It reduces the pluralism that underpins global cultural richness and can contribute to social fragmentation, especially in multicultural societies. Thus, it is essential for policymakers, educators, and cultural organizations to actively promote the production and dissemination of local cultural content in digital formats, ensuring that technological progress does not come at the cost of cultural erasure.

Digital Obsolescence and Accessibility

Digital obsolescence refers to the process by which digital formats, software, and hardware become outdated and unreadable due to the rapid pace of technological advancement. In the context of cultural preservation, this poses a serious threat to the longevity and accessibility of digitized cultural artifacts. Unlike physical objects that may endure for centuries with proper conservation, digital materials require continuous maintenance, migration, and updating to remain accessible and usable.

Cultural institutions and archives around the world face the challenge of managing legacy formats—such as floppy disks, outdated file types, or software-dependent documents—which are increasingly difficult to access without specialized tools. Without proactive preservation strategies, important cultural data can be lost simply because the hardware or software needed to read them no longer exists. For example, many early digital archives of indigenous oral histories or community records created in the 1990s are now at risk due to obsolescence.

In addition to technical risks, **accessibility** remains a major barrier to equitable cultural preservation in the digital era. The digital divide—a term used to describe the gap between those who have access to digital technologies and those who do not—further complicates the situation. Rural populations, economically disadvantaged communities, and regions with limited internet infrastructure may be excluded from accessing or contributing to digital cultural platforms. As a result, the cultural narratives of marginalized groups often remain underrepresented or entirely absent from the global digital landscape.

Moreover, accessibility is not only about infrastructure but also about language, interface design, and digital literacy. Cultural repositories and digital archives are frequently designed with a global or Western user in mind, making them difficult to navigate for people from different linguistic or cultural backgrounds. To ensure meaningful inclusion, digital platforms must consider multilingual support, user-friendly interfaces, and culturally relevant content structures.

Therefore, addressing digital obsolescence and improving accessibility are crucial components of any sustainable cultural preservation strategy. This requires long-term investment in digital infrastructure, regular format migration, and inclusive design principles. Furthermore, international collaboration is necessary to establish open standards and practices that enable cultural institutions to share knowledge and technology, ensuring that cultural heritage remains accessible to future generations regardless of location or technological status.

Research and methods.

Intellectual Property and Ethical Concerns

The digitization of cultural heritage raises complex intellectual property (IP) and ethical issues, particularly concerning ownership, consent, and cultural sensitivity. As cultural expressions are increasingly digitized and made accessible online, questions arise about who has the right to control, distribute, and benefit from these materials. This is especially critical for traditional

knowledge and indigenous cultural content, which may not be protected adequately under conventional intellectual property laws.

Many cultural works, such as oral histories, folk songs, and indigenous designs, originate from collective traditions rather than individual creators. This communal nature makes them difficult to fit into standard IP frameworks, which typically prioritize individual authorship and economic exploitation. As a result, cultural communities often have limited legal recourse when their traditional expressions are used without consent by third parties for commercial or academic purposes. This can lead to the commodification and misrepresentation of their heritage, exacerbating historical inequalities and marginalization.

Moreover, the global and open nature of digital platforms increases the risk of cultural appropriation—the unauthorized use or adaptation of cultural elements by those outside the culture of origin. In the absence of ethical guidelines or community consultation, digitization projects can unintentionally strip cultural materials of their context and meaning. For instance, sacred rituals or symbols shared online without proper explanation or cultural framing may be misunderstood, trivialized, or even exploited.

Another ethical concern involves the lack of informed consent and control over how cultural data are collected, stored, and used. In many cases, digital archives are created by external institutions—such as museums, universities, or NGOs—without adequate participation from the communities whose culture is being documented. This practice can reproduce colonial power dynamics and ignore the rights of cultural custodians to define how their heritage should be represented and shared.

To address these issues, scholars and cultural institutions must adopt more inclusive and ethical approaches to digital preservation. This includes:

- ✓ Establishing **community-led protocols** for digitization and access;
- ✓ Recognizing **collective ownership** models in IP legislation;
- ✓ Providing **clear attribution** and cultural context for digital materials;
- ✓ Ensuring **free, prior, and informed consent** from source communities;
- ✓ Promoting **benefit-sharing mechanisms** when cultural materials are used for research or commercial purposes.

Incorporating these practices not only respects the cultural rights of communities but also enhances the integrity and sustainability of digital cultural heritage efforts. Ethical stewardship and responsible digital access are essential in creating a more just and inclusive digital future for cultural preservation.

Opportunities for Cultural Preservation through Digital Technologies

Digital Archiving and Documentation

Digital archiving and documentation have emerged as essential tools for preserving cultural heritage in the modern era. Digital technologies offer unprecedented capabilities to capture, store, and share cultural artifacts and traditions that may otherwise be lost due to time, neglect, or physical deterioration. The ability to create high-resolution digital records of art, architecture, manuscripts, music, oral histories, and traditional practices has transformed how cultural materials are safeguarded and made accessible to global audiences.

One of the most significant advantages of digital archiving is the ability to preserve fragile or endangered cultural assets. Through techniques such as 3D scanning, high-definition imaging, and digital recording, cultural artifacts that are vulnerable to environmental factors (e.g., climate change, decay, or natural disasters) can be replicated and stored in digital formats. These digital copies serve not only as backup for the original objects but also as a resource for research, education, and public engagement. For instance, UNESCO's World Heritage Sites are increasingly

being digitized to prevent the loss of these invaluable landmarks in the event of environmental disasters, such as earthquakes or floods.

In addition to physical objects, digital archiving also plays a crucial role in preserving intangible cultural heritage, such as language, music, folklore, and performing arts. By documenting these elements in digital formats, it becomes possible to preserve traditions that may not have been previously recorded in written form. Digital tools, including audio and video recordings, allow for the capture of oral histories, songs, dances, and rituals, which can then be made accessible for future generations. Such efforts have proven vital for communities whose cultural expressions are at risk of being forgotten as younger generations embrace globalized cultures and technologies.

Moreover, digital archiving facilitates the **global dissemination of cultural knowledge**. Online databases, digital libraries, and virtual museums allow people from around the world to access cultural materials that would otherwise be confined to physical spaces. The digital environment removes geographical, temporal, and financial barriers to access, democratizing the availability of cultural heritage. This increased accessibility encourages cultural exchange and understanding across borders, promoting intercultural dialogue and appreciation.

However, the digitization of cultural materials is not without challenges. Issues related to digital preservation, such as format obsolescence, data corruption, and the loss of context, must be addressed to ensure the longevity and accuracy of digital archives. Regular updates, migration to new formats, and the development of sustainable digital storage solutions are necessary to maintain the integrity of digital records over time. Furthermore, while digitization offers a means of broadening access, it is essential that cultural communities remain involved in decisions regarding the representation and distribution of their heritage to prevent misrepresentation and cultural appropriation.

For digital archiving to be effective, it must be done with respect to **cultural protocols** and ethical considerations. This includes ensuring that the digitization process is conducted with **free, prior, and informed consent** from the communities whose heritage is being documented, and that cultural custodians retain control over how their traditions and materials are shared and used. Additionally, ethical considerations should govern the use of digital archives, with measures in place to prevent unauthorized commercial exploitation or misrepresentation of cultural materials.

In conclusion, digital archiving and documentation represent powerful tools in the fight to preserve cultural heritage in the digital age. By leveraging technology to create accurate, accessible, and sustainable records of both tangible and intangible cultural assets, societies can safeguard their traditions for future generations. However, the process must be carried out with cultural sensitivity and respect for the rights of indigenous and local communities to ensure that these efforts contribute to, rather than undermine, the preservation of cultural diversity.

Online Platforms for Cultural Promotion

The rise of digital technologies and the increasing ubiquity of the internet have opened new avenues for promoting and disseminating cultural heritage to global audiences. Online platforms, including social media, streaming services, digital exhibitions, and virtual museums, have transformed the way cultural materials are shared, celebrated, and engaged with. These platforms offer opportunities for cultural communities to present their traditions to a wider public while simultaneously fostering cross-cultural dialogue and understanding.

Social media platforms such as Instagram, Facebook, Twitter, and TikTok have become essential tools for cultural promotion, especially among younger generations. These platforms allow individuals, organizations, and cultural institutions to create and share content that showcases aspects of national and local cultures, from traditional music and dance to visual arts and festivals. The ability to interact with global audiences in real-time enables cultural communities to present their heritage in dynamic and accessible ways. Hashtags, live-streaming events, and user-generated content also amplify the reach of cultural expressions, helping them gain recognition and appreciation beyond local boundaries.

For example, the #IndigenousArt hashtag on Instagram has become a powerful platform for indigenous artists to share their works with a global audience, highlighting their cultural identities and raising awareness about pressing issues such as land rights, cultural appropriation, and environmental preservation. Similarly, cultural festivals that were once limited to physical spaces are now broadcasted globally through digital media, allowing millions of people to experience them virtually.

Streaming services such as YouTube, Netflix, and Spotify also play a pivotal role in the promotion of culture. These platforms have democratized access to cultural content, making it possible for anyone with an internet connection to access films, music, documentaries, and performances from different parts of the world. For example, YouTube has allowed musicians and filmmakers from remote communities to showcase their works to international audiences, while Netflix has become a key player in promoting non-Western cinema, such as the rise of Nigerian Nollywood films and Korean K-dramas. This type of exposure not only promotes cultural diversity but also challenges dominant cultural narratives, fostering a more inclusive global entertainment industry.

In addition to entertainment, **digital exhibitions** and **virtual museums** provide platforms for cultural institutions to showcase art, artifacts, and historical objects. These platforms make cultural heritage accessible to those who cannot physically visit museums or galleries, democratizing access to art and history. Virtual museum tours, 3D reconstructions of archaeological sites, and interactive exhibits allow users to explore cultural heritage in innovative ways. The Louvre Museum in Paris, for example, offers virtual tours that allow people worldwide to explore its collections, including the famous Mona Lisa, without leaving their homes.

However, while online platforms have revolutionized cultural promotion, they also pose challenges. One major concern is the potential for **cultural appropriation**, where cultural elements are taken out of context and commercialized without proper attribution or respect for their original significance. This issue has been particularly prevalent on social media, where users often share traditional cultural symbols or practices without understanding their deeper meanings or implications. As cultural content becomes more globalized, it is essential to establish ethical guidelines and ensure that content shared on digital platforms respects the cultural ownership and context of the communities it originates from.

Another challenge is the **digital divide**, which refers to the unequal access to digital technologies between different regions, social groups, and economic classes. While online platforms offer great potential for cultural promotion, not all communities have the resources or infrastructure to participate in the digital space. Rural areas, marginalized communities, and developing countries may face challenges related to internet access, digital literacy, and the availability of technology. This digital inequality could result in a lack of representation for certain cultures, further reinforcing power imbalances in the global cultural landscape.

To address these challenges, cultural organizations and institutions must prioritize inclusivity and equity in their digital initiatives. Ensuring that content is accessible in multiple languages, respecting cultural protocols, and providing digital literacy programs are essential steps to ensure that online platforms serve as tools for **cultural empowerment** rather than exploitation. Furthermore, collaboration between governments, cultural organizations, and tech companies is critical in developing policies and practices that protect cultural rights and promote responsible digital engagement.

In conclusion, online platforms have become indispensable tools for the promotion of cultural heritage in the digital age. They provide unprecedented opportunities for cultural exchange, representation, and global outreach, enabling communities to share their traditions with a broader audience. However, to fully realize the potential of these platforms, it is crucial to address ethical concerns, ensure equitable access, and promote culturally sensitive practices that respect the rights of cultural communities. Only by adopting a responsible and inclusive approach can online platforms contribute to the preservation and flourishing of cultural diversity in the digital age.

Result and discussion.

Educational Initiatives and Digital Literacy

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Strategies for Balancing Tradition and Technology

In the digital age, the challenge of preserving and promoting cultural heritage lies in finding an equilibrium between technological innovation and traditional practices. While technology offers powerful tools for the documentation, preservation, and dissemination of culture, there is a growing need to ensure that it does not overshadow or replace the intrinsic value of traditional customs, craftsmanship, and oral histories. Striking a balance between embracing technological advancements and safeguarding cultural integrity requires thoughtful and inclusive strategies that respect both the benefits of modernity and the importance of tradition.

Community-Driven Approaches

One of the most effective strategies for balancing tradition and technology is to ensure that cultural communities are actively involved in the process of digitization and technological adoption. Community-driven approaches emphasize the importance of **cultural custodianship**—allowing local and indigenous communities to determine how their heritage is represented and shared in digital spaces. This involvement not only guarantees that digital initiatives are culturally appropriate but also empowers communities to take ownership of their cultural legacy in the digital age.

For example, many indigenous groups have led their own efforts to digitize oral traditions, rituals, and artistic expressions, ensuring that they are preserved and passed on in a way that respects their cultural significance. These efforts can also include the creation of digital platforms that allow communities to share their culture with others while controlling how their cultural materials are used. Through participatory digital archives or cultural repositories, communities can guide the preservation process, selecting what to preserve and how to protect their intellectual property.

Collaborative Partnerships

Collaboration between cultural institutions, governments, and technology companies can also facilitate the balance between tradition and technology. These partnerships can bring together the expertise of historians, anthropologists, and cultural leaders with the capabilities of digital technologists to create preservation solutions that are both technologically advanced and culturally sensitive. Collaborative initiatives can ensure that digital technologies are employed in ways that complement rather than disrupt traditional cultural practices.

For example, partnerships between local cultural centers and tech companies could result in the development of culturally specific applications or platforms that allow users to interact with traditional content in a respectful and meaningful way. Such platforms might integrate augmented reality (AR) or virtual reality (VR) technologies to enable immersive experiences of cultural heritage, while ensuring that these technologies do not distort the meanings or practices involved.

Additionally, these collaborations can help ensure that the transition from traditional to digital forms of cultural expression is gradual, allowing cultural practitioners to adapt without losing the essence of their heritage. This is particularly crucial for intangible cultural heritage, such as dance, music, and language, where the digital version must accurately reflect the nuances of performance and community context.

Protecting Cultural Context and Meaning

While technology can facilitate the sharing of cultural materials, it is important to recognize that **context** is crucial for understanding the true meaning of many cultural practices. Digitizing cultural heritage must go beyond merely capturing artifacts or performances; it must also preserve the context, history, and significance behind them. For instance, when digitizing oral traditions or performances, it is essential to include contextual information that explains their cultural relevance, social role, and symbolic meanings.

To maintain the integrity of cultural practices in the digital realm, it is important to avoid **de-contextualization**, where cultural elements are presented without their historical or social framework. One strategy to combat this is to pair digital content with accompanying educational materials, such as essays, video interviews, and detailed annotations that provide cultural background. These additions help users engage with the content in a more informed and respectful manner, ensuring that they do not misinterpret or trivialize cultural expressions.

Digital Literacy and Education

Another essential strategy for balancing tradition and technology is the promotion of **digital literacy** within cultural communities. While technology offers opportunities for cultural promotion, it is crucial that communities are equipped with the skills to use digital tools effectively and responsibly. Digital literacy programs can teach individuals not only how to use technology to document and share their culture but also how to navigate the complexities of intellectual property, online ethics, and data protection.

By integrating **digital literacy** into educational curricula, especially for younger generations, communities can ensure that future custodians of cultural heritage are both technologically savvy and culturally informed. Furthermore, these educational initiatives can encourage the development of local digital content that reflects diverse cultural perspectives, empowering communities to shape their own narrative in the digital world.

Sustainable and Ethical Digital Practices

To ensure that the use of technology in cultural preservation remains respectful and sustainable, it is important to adopt ethical guidelines and sustainable practices. These include the responsible use of data, ensuring that digital archives are accessible to the public while respecting the rights of cultural communities. Additionally, it is essential to consider the environmental impact of digital technologies, as data storage and processing can require substantial energy consumption.

One approach is to implement **open access** policies, where digital materials are freely available for public use, but the ethical boundaries of sharing—such as informed consent and respect for intellectual property rights—are strictly maintained. This ensures that while culture is shared widely, it is not exploited for commercial purposes without benefiting the communities from which it originates.

Maintaining Physical Traditions in the Digital Age

While technology can enhance the preservation of culture, it is equally important to maintain the **physical expression** of cultural traditions. For instance, digital archiving of traditional crafts, textiles, or rituals can be valuable for future reference, but it should not replace the practice of these traditions in the physical world. Communities should continue to practice and teach these traditions, ensuring they are passed down through generations in their authentic forms.

This approach can be complemented by **hybrid models**, where both traditional and digital methods are used together. For example, digital technologies can be used to support traditional practices, such as through the creation of online educational platforms for artisan crafts or the live-streaming of cultural festivals, which allows them to reach global audiences while maintaining their physical, communal essence.

CONCLUSION

The digital age presents both challenges and opportunities for the preservation of national culture. While the risks of cultural homogenization and digital obsolescence are significant, the potential for leveraging digital technologies to document, share, and promote cultural heritage is equally promising. By adopting a balanced approach that respects traditional practices and embraces technological advancements, societies can ensure the resilience and vitality of their cultural identities in the digital era.

References

1. UNESCO. (2013). *The role of digital technologies in the preservation of cultural heritage*. Paris: UNESCO.
2. Smith, L. (2006). *Uses of heritage*. Routledge.
3. Jones, S. (2010). *The Internet and society*. Polity Press.
4. Anderson, C. (2012). *Makers: The new industrial revolution*. Crown Business.
5. Taylor, A. (2015). *Digital preservation and the role of libraries*. *Library Trends*, 63(3), 395-411.
6. Chorjeva Iroda Kurbonboevna. (2024). A STUDY OF ENGLISH AND UZBEK PROVERBS CONTAINING THE MEDICAL TERMS: A CULTURAL AND LINGUISTIC ANALYSIS. *Web of Humanities: Journal of Social Science and Humanitarian Research*, 2(8), 1–7.
7. Chorjeva Iroda Kurbonboevna. (2024). ANALYSIS OF STYLISTIC DEVICES IN ENGLISH AND UZBEK PROVERBS CONTAINING MEDICAL LEXEMES. *Web of Humanities: Journal of Social Science and Humanitarian Research*, 2(10), 22–27.