



The Impact of the Digital Format on Kazakh Youth's Information Consumption and Reading Culture

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Abstract

In the digital age, the reading habits of Kazakh youth have transformed significantly. This study investigates the impact of digitalization on their reading culture, examining factors contributing to the decline of traditional print formats and their effects on reading frequency, preferences and comprehension. The research explores the role of social communications, electronic devices and online resources in shaping these changes. Using a survey method, data was collected from university students—undergraduates and doctoral candidates—revealing both positive and negative impacts of digital platforms. While offering convenience and interactivity, these platforms also bring challenges, such as information overload and distractions. Surprisingly, the younger generation shows increased consumption of content in the Kazakh language compared to older generations. Understanding these preferences is crucial for preserving linguistic, moral and aesthetic values. The study contributes to the broader discourse on digitization, advocating for balanced strategies that leverage digital advantages while safeguarding traditional reading practices.

Keywords Forms of reading · Reading culture · Youth · Digital format · Traditional reading

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Introduction

The contemporary era is characterized by rapid transformations in the modes and mediums of mass communication. Previously, an individual's participation in information exchange merely required access to a limited number of printed publications, television channels and radio broadcasts. However, the landscape has undergone substantial changes. In the last two decades, advancements in communication technologies have not only altered the channels and velocity of information dissemination but have also fundamentally reshaped the composition of participants, as well as the scale and content of the information stream. The advent of the Internet has revolutionized the dynamics of information exchange. Individuals, upon gaining Internet access, not only tap into vast informational resources but also assume an active role as contributors, serving as sources for information exchange. Thus, profound changes in mass communication are taking place due to the development of technology, and the accessibility and functionality of modern Internet platforms. As more individuals engage in information exchange on the Internet, there is a commensurate escalation in the volume of generated information. This exponential increase is evident in the statistics provided by Statista (2022), indicating that, by 2023, humanity had amassed a total of 97 zettabytes of data. Projections suggest that this volume will double by 2025, underscoring the transformative impact of technology on the expansive and dynamic realm of mass communication (Statista 2022). These data illustrate a notable trend, wherein the quantity of generated information undergoes a twofold increase every two years. However, it is crucial to recognize that the physiological capacity of the human brain to process information remains finite. The growth of volume and irresponsible filling of information flows has positive and negative effects on human beings, especially children and young people.

In the contemporary landscape, the sheer volume of information does not always translate into positive content. Individuals can create and disseminate content of a questionable nature easily across platforms with vast audiences. This trend fosters a sense of irresponsibility, permissiveness, unscrupulousness and cynicism. The demand for technologies that distort and manipulate information is on the rise, and information wars have become commonplace in mass media. Consequently, the preservation of moral and ethical norms, along with the cultivation of social and psychological stability, emerges as pressing challenges for humanity in the face of rapid changes in communication technologies. This prompts consideration of the threats posed to individuals by the swift evolution of communication technologies and strategies to mitigate the adverse effects of technological explosions on the younger generation.

Furthermore, the socialization process of young individuals has become intricate. The sociocultural milieu surrounding the youth is saturated with diverse mass communication channels, reshaping traditional forms of communication, beliefs, tastes, interests and habits. The substantial influx of information poses challenges as individuals grapple with filtering and processing information, making it challenging to locate, comprehend and apply relevant information effectively. To critically analyze the plethora of information in their environment, modern young individuals

need to acquire media literacy skills, enabling a better understanding of the language employed in the media landscape. This modern media environment significantly influences the moral qualities and values of youth. Our research hypothesis is grounded in the notion that the utilization of information in print media is diminishing, with Kazakh youth expressing a preference for digital formats and reduced use of their native language in communication.

Traditional printed texts are widely acknowledged for enhancing the quality of understanding and memorization of content. The reader, deeply immersed in the text, tends to perceive it more emotionally. On the other hand, reading in digital format offers the advantage of swiftly locating necessary information and heightened motivation. Nevertheless, numerous scholars argue that the superficial reading (sliding) or scanning characteristic of digital content consumption is deemed an insufficiently effective method for the qualitative assimilation of the material. According to Russian scholar Y. Melentieva, web users engage in scanning rather than reading text as the Internet facilitates rapid information retrieval and recognition of potential content significance. This non-linear and sliding reading approach sacrifices the possibility of deep, thoughtful comprehension of information, resulting in reduced levels of comprehension and diminished reading pleasure (Kump 1998; Melentieva 2019).

On the other hand, engagement with books contributes significantly to human development. The cultural impact of media and online communications introduces complexity to human life and alters spiritual orientations. The speed and volume of transmitted data are deemed incompatible with the depth of literary reading as the nature of computers lacks the conducive environment for reflection and meditation (Pennington and Waxler 2017). Over the past decade, the transition of traditional print forms such as newspapers and magazines to online formats has been observed. However, this digital transformation is not a mere replication of the paper version on the Internet; it has given rise to a new interactive form with distinct functions, incorporating animation elements and the fundamental properties of hypertext. Online formats not only reshape cultural preferences but also prove economically attractive for authors, expanding readership across scientific, fiction and business literature. Despite this broadened accessibility, our research indicates a diminishing interest in reading books and literary works among undergraduate, graduate and doctoral students, who increasingly rely on digital devices.

Literary reading, viewed historically as a crucial component of a well-rounded education, holds the potential to profoundly influence individuals and society, fostering a new comprehension of the surrounding environment. The advent of computerized word processing prompted the recognition that reading from the screen of an electronic device lacks the effectiveness and emotional impact associated with reading a paper book. In a study led by American researcher Claudia McVicker (2017), investigating children's preferences for reading formats—traditional books or e-books—over one-third of participants favored traditional paper reading. These children expressed enjoyment in physically holding and feeling the book, emphasizing the tactile experience of turning the pages. One participant affectionately remarked, "When I like a book, I want to hold it. You can't hug an iPad" (McVicker 2017). Printed books contribute to a deeper emotional experience and enhance the

significance of thoughts and feelings. In contrast, reading from digital screens, such as computers, smartphones or tablets, lacks the warm mental reflection associated with traditional books, leading to a superficial perception of the material.

Amid the evolving digital landscape in Kazakhstan, the impact of communication technologies on the younger generation, the waning interest in reading, and the diminishing culture of traditional book reading remain insufficiently explored. This article addresses this gap by presenting the results and analysis of a survey involving 248 students. The survey aims to identify the information preferences, purposes and time spent on Internet resources, as well as the forms and content characteristics of reading. The study represents an endeavor to discern the information preferences of Kazakh youth and ascertain the extent to which e-reading surpasses traditional paper reading.

Literature Review

In the realm of scientific inquiry, the evolution of information exchange, alterations in mass communication and the influence of Internet technologies on individuals and social relations have been examined from various perspectives. In the global context, digital communications have significantly reshaped the communication and reading behaviors of Kazakh youth, diminishing cognitive patience—reflected in reduced discipline and concentration among young readers. Comparable shifts are evident in research by Russian, Dutch and German scholars, establishing a correlation between changes in youth reading habits and declining reading comprehension scores.

For instance, in the Netherlands, the percentage of residents not reading books rose from 11 to 21% between 2012 and 2016, as evidenced by Leesmonitor (2016). This trend aligns with the book lending statistics of the National Library of the Netherlands, showing a substantial drop in book lending from 130 to 70 million during the period of robust digital communication development from 2005 to 2016 (Mangen and Van der Weel 2016). Similarly, in Germany, book sales experienced an average decline of 35% between 2013 and 2017 (Lizunova et al. 2020). In Russia, the proportion of individuals actively reading fiction (daily or weekly) halved from 1994 to 2019, with 27% reporting reading fiction once a year, and approximately 28% not reading books at all (Volkov and Goncharov 2019).

Empirical studies consistently affirm the superiority of paper reading, highlighting the significance of spatial and temporal markers in this preference. Recent research conducted by Russian linguists sheds light on factors influencing the reading format preferences of contemporary youth. Key findings from the study include digital reading is predominant among Russian schoolchildren, particularly on smartphones; paper books remain the preferred format for fiction and leisure reading; age plays a role, with older students favoring screen reading, while younger students find screen reading tiring and lose interest more quickly; those who do not perceive reading as an engaging leisure activity prefer digital formats; and screen reading is associated with higher likelihood of distraction and quicker fatigue, resulting in diminished interest in the material (Lebedeva et al. 2020).

Between 2014 and 2018, the European Cooperation in Science and Technology (COST) program conducted a large-scale study involving 180 experts from Europe across a wide range of scientific fields. The aim was to determine the difference between screen and paper versions of reading and the impact of reading forms on reading comprehension. The results of the megastudy showed that “reading in the digital environment dynamically changes the communication environment, simplifies the consumer’s access to information, and influences society by changing existing reading habits.” Experts positively assessed the usefulness of the digital format, which shapes the modern reader’s flexibility of thinking and multitasking skills. At the same time, trends in the use of mixed reading formats by consumers were identified. This is evidence that for most digital users, reading from a screen is becoming a habitual activity.

The Stavanger Declaration (2018) is a four-year study conducted by nearly 200 scholars and scientists on how digitization affects reading habits. The recommendations of the Stavanger Declaration noted the important superiority of paper reading, which has a more profound impact on the reader’s cognitive abilities. It was recommended that educational institutions and educators develop “instructional strategies and tools to overcome children’s difficulties with reading comprehension of digital content and to address the delay in emerging critical thinking skills.”

The ongoing global shift towards digital communication necessitates a comprehensive examination of the merits and drawbacks associated with both paper and digital reading. It is imperative to address these drawbacks through the cultivation of book culture and traditional reading practices. However, it is crucial to acknowledge alternative viewpoints that assert the advantages of screen reading. Scholars such as K. Roskos and S. Neuman (2014) argue that information and communication technologies have enhanced digital reading, particularly benefiting low-performing students through interactive features in e-books and applications. Over the past two decades, the proliferation of e-reading has been driven by advancements in communication technologies, with smartphones emerging as a ubiquitous platform for mass reading. While at the beginning of the new millennium e-books were represented by a few models such as Amazon Kindle (2007), PocketBook (2008), ONYX BOOX (2009), DIGMA (2012), iPad tablets (2010) and Samsung Galaxy Tab (2010), smartphones have become the platform of mass reading.

In her book *Words Onscreen: The Fate of Reading in a Digital World* (2015), linguist and professor emerita Naomi S. Baron explores the transformative impact of technology on human reading culture. While acknowledging the popularity and advantages of digital reading, including convenience, cost-effectiveness and access to extensive written resources, Baron outlines notable disadvantages:

- Users easily succumb to distractions from the multitasking capabilities of computers or gadgets, shifting from immersive reading to mere glancing.
- Modern reading habits, characterized by brief attention spans, influence authors and publishers to produce shorter, less demanding materials.

As previously mentioned, hypertext has significantly permeated written communication, altering traditional reading habits and introducing new text formats. The

dominance of e-reading over its paper counterpart, accompanied by shifts in audience attention, poses substantial challenges. However, the impact of these changes and their underlying causes remains unexplored in the social science context of Kazakhstan.

Studies from international educational institutions indicate that children and young individuals exhibit better comprehension of texts when reading from traditional paper media. This distinction arises from the varied purposes associated with reading printed and digital text. Reading from a computer screen or digital device often involves distractions as the screen signifies communication or information search. During such digital reading, a person's eyes tend to slide and wander across the screen, with the brain simultaneously processing text, viewing images or analyzing other visual information. These elements create distractions, preventing focused immersion in the main material. In contrast, paper reading eliminates this mental scattering, allowing individuals to thoughtfully and fully concentrate on the text, engaging their imagination (Lombina et al. 2019; Yesenbekova 2020a).

To address this, a potential solution involves the adoption of a combined form of information acquisition: audiovisual mixed reading in both digital and paper formats. This approach aims to leverage the strengths of traditional and digital literacy, facilitating a comprehensive understanding of received information.

Empirical studies conducted by the authors on young learners (undergraduates, master's and doctoral students at Eurasian National University) have underscored the necessity for new reading approaches to achieve a deep mastery of learning material. These cross-cultural studies partially support the hypothesis that the development of the Internet and e-reading gives rise to a social problem, with the depth of this issue contingent on the cultural and mental characteristics of the country. Baron (2015) aligns with this perspective, noting that "digital reading has become popular in the US and the UK, but in France and Japan, traditional paper reading is not losing its position." Digital reading habits tend to foster multitasking, making it challenging for individuals to concentrate on the material being read. A survey conducted by Baron (2016) among 429 university students in the US, Japan, Germany, Slovenia and India revealed that 67% of students multitask while reading digitally compared to 41% when reading printed books. While Baron's study delves into the comparison between reading from screens and paper books, further exploration of these circumstances is required, potentially involving collaboration with psychologists and neuroscientists.

The digital space of the human being puts considerable pressure on their perception of the surrounding world, processing and determining the required content of information. Science does not yet know the answer to the question of how the brain functions when information is received in different formats: electronic and printed. It is not unimportant to find out the impact of the digital environment on human reflex activity and the ability to think critically (Way and Malvini 2017; Yesenbekova 2020b). As the results of modern neurobiological research have shown, the human brain perceives information on paper and electronically in different ways. Scientists have proven that when reading from a screen, a person's attention slides over the text; they are easily distracted because the brain requires "clicking

on hyperlinks” to obtain new content or images. In comparison, traditional printed books give more superiority in understanding the meaning of the text and memorizing it. When reading a paper book, a person is not distracted and easily immersed in the atmosphere of the work, and better memorization of the story is ensured (Wolf 2017). Neuropsychologist Marianne Wolf argues that “humans were never born to read. Reading is a human invention.” In their view, our brains have been rewiring and changing for 5,500 years, since the Sumerians invented writing. And since then, the human brain has been constantly evolving. By developing the ability to read, humans gradually reprogrammed and acquired a reading brain, which changed the nature of human thought.

Wolf admits that during the seven years of research, while they were trying to describe the evolution of the reading brain, human culture had moved to another level—digital culture. Continuing Wolf’s thought, we can assume that the science of human transformation has yet to answer how the brain changes when immersed in a digital environment for ten or more hours a day. We cannot yet model how the growing dependence of youth and children on digital sources affects their cognitive abilities. Wolf claims (2017) the formation of a “bi-literate” brain in today’s readers; they believe that both forms of reading will exist in parallel and, depending on one’s goals, an individual should maximize the utility of each.

Thus, a model of a reader’s future may contain the utilization of the optimal skills of both traditional and digital reading styles. The findings of 200 scientists who participated in the E-READ research project conducted by the European Cooperation in Science and Technology (COST) program support Wolf’s conclusion. In the COST Stavanger Declaration (2018), European experts argue that reading in hard copy increases reading comprehension and helps comprehend more complex scientific and educational material. Experts were unanimous in their opinion that the reading habits of young learners of digital content negatively affect the depth of text comprehension and superficial, scanning browsing impairs the understanding and comprehension of content and limits cognitive abilities.

Methods

The object of this study is the language preferences of Kazakh youth in reading and information consumption. A decrease both in the consumption of information on paper media and preference for digital formats and in the share of the Kazakh language in communication are important components of our hypothesis. To test the scientific hypothesis regarding the preferences of Kazakh youth in information consumption and language choice, the authors conducted a comprehensive sociological study among undergraduate, graduate and doctoral students at Eurasian National University (ENU). This study involved a twenty-question survey to assess the use of digital and paper media and language preferences in content. The research methods included theoretical analysis, questionnaire distribution, result generalization and statistical data processing. The study was conducted from September to October 2023. The results of the survey were combined for further analysis of participants’

preferences in choosing: a) digital or paper reading; and b) language, and consumed content. The questionnaire was designed to find answers to the following:

1. How much time per day and for what purpose do they use the Internet?
2. How much time do they spend reading printed books or other printed materials?
3. Which language do they prefer for their daily digital communication?

The surveys were conducted anonymously because some of the questions were sensitive, and the organizers wanted to obtain the most objective answers from undergraduate, graduate and doctoral students.

The respondents comprised 248 young people aged 18 to 30, including 110 doctoral students and 138 undergraduate and graduate students, from educational institutions in Astana. Of these, 53% were young men and 47% were young women. Half of the respondents have higher education; the other half have incomplete higher education. Participants were asked to answer questions about the purpose and duration of using Internet resources, reading paper books, the main sources of information, and the language in which they obtained information. The analysis of information consumption in digital and paper forms was divided according to three parameters: first, the duration of use of Internet resources; second, the form of receiving information (digital or paper); and third, the language of the content used.

Answering the questions, the participants noted the following:

1. time spent per day in front of electronic device screens
2. the purpose of using the Internet
3. frequently used sites
4. how many printed books they have read over the last year
5. what TV channels they watched and radio stations they listened to, and what content they were interested in.

All questions contained several answer options. Another goal of the study was to assess the level of Kazakh language consumption by respondents in receiving information.

Academic publications, as well as empirical data obtained in American and Dutch educational institutions, were studied in the course of the research. Behaviors and preferences of forms of reading and information consumption of American, Dutch and Kazakh youth were subjected to comparative analysis.

Results

According to the results of the research, we managed to find out how and what modern Kazakh youth read on the Internet, how much time they spent on Internet resources, their preferred type of reading, and the level of involvement in reading online or from material media (books, newspapers, magazines, other paper media). To the first question “How much time do you spend online each day?” the answers

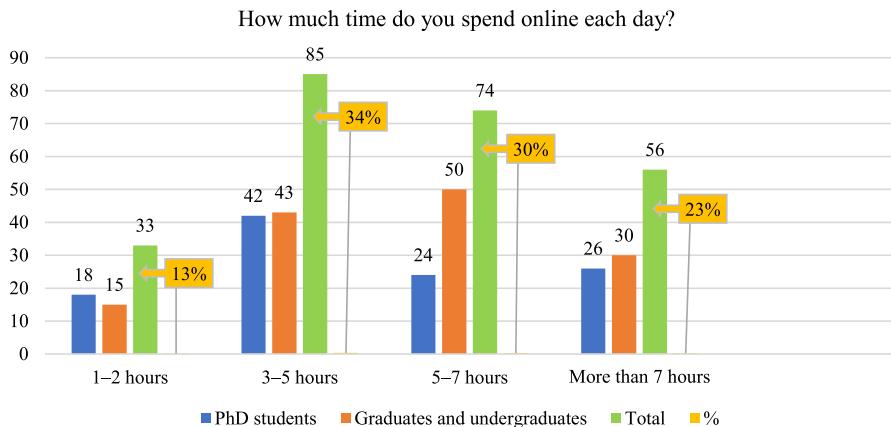


Fig. 1 Online time distribution: undergraduate, graduate and doctoral students.

of the group of doctoral students and the group of undergraduate and graduate students were about the same.

As the surveys were carried out separately for doctoral and graduate students, they are shown in different colors in Figure 1. The green color shows the general results for both groups. As can be seen from Figure 1, 13% of respondents use the Internet for 1–2 hours per day, 34% for 3–5 hours and 23% for more than 7 hours. On the other hand, 30% of respondents said they used the Internet for 5–7 hours a day, and the number of graduate students who said this was twice as high as the number of doctoral students who said they used the Internet for the same amount of time. Other responses were about equally distributed. The twofold difference in the number of graduate students compared to doctoral students can be explained by the greater use of the first social media mentioned by them in subsequent answers. Our arguments are also supported by the large number of graduate students who use the Internet for more than seven hours a day. For today's youth, the concepts of the Internet and social media have become identical, allowing users to maintain communication, and create and distribute interesting content to an unlimited number of people. Due to psychological peculiarities at an earlier age, young people hardly plan and control the time spent on social networks, devoting seven to eight hours or more to virtual communication.

When asked “For what purpose do you use the Internet?” the majority of participants chose the answer “To look for interesting information” (see Figure 2). From the responses to this question, we can conclude that both groups use the Internet more for entertainment. Only 17% of the survey participants answered that they use the Internet for education and reading books; 41% used the Internet to find interesting information; 26% to communicate with friends; and 16% to play games, spend free time and watch videos. We believe that these are very alarming figures, showing a rapid change in the interests and preferences of Kazakh youth towards entertainment.

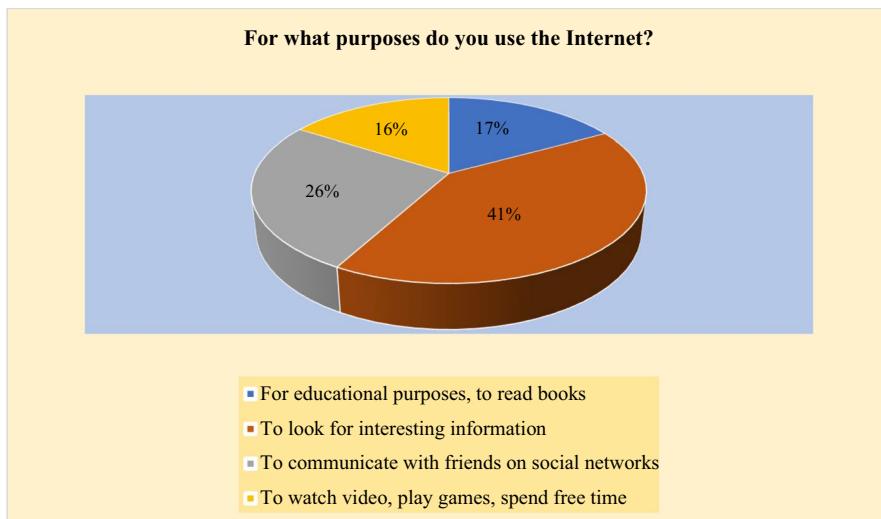


Fig. 2 Internet usage purposes.

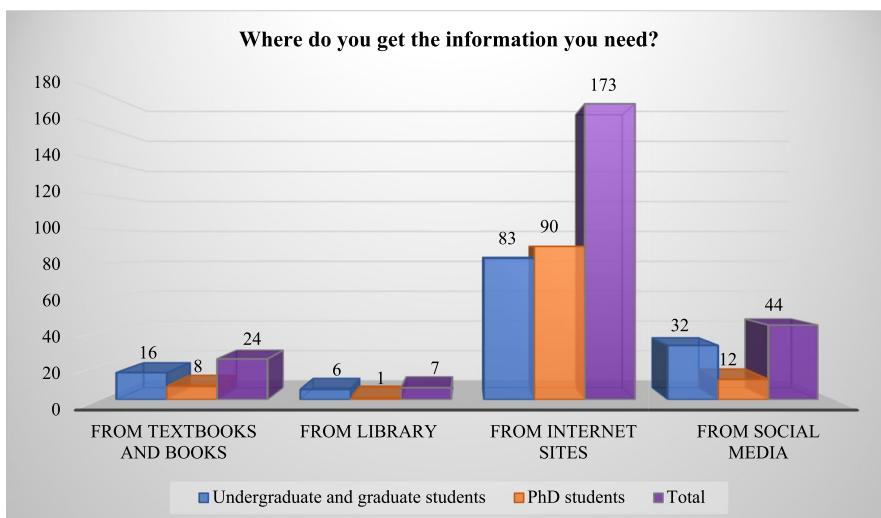


Fig. 3 Sources of information: responses from undergraduate, graduate students and doctoral students.

The previous answers are confirmed by the respondents' answers to the question about where they obtain necessary information. The questionnaire contained the following answer options: from textbooks and books; from the library; from Internet sites; and from social media. According to Figure 3, Internet resources became the most preferred source of necessary information for Kazakhstani studying youth. Out of 248 respondents, 173 chose this answer option, which was 70% of respondents.

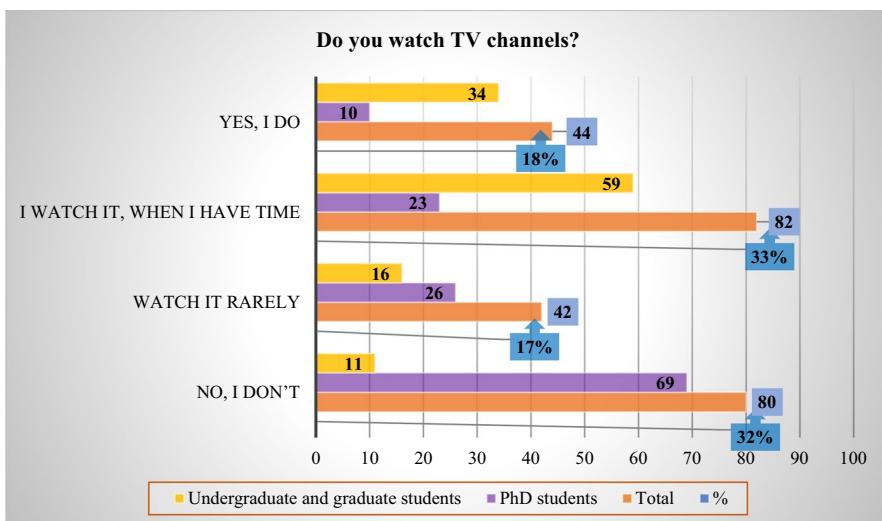


Fig. 4 TV-content consumption.

Textbooks and books help about 10% of students in their search for necessary information; 18% of the survey participants indicated social media as a source of necessary information.

The answers to the question “Do you watch TV channels?” were unexpected for the researchers. It turned out that one-third of all respondents (32%) do not watch TV channels (see Figure 4). These data strongly contradict the opinion of Kazakh scientists who argue for the preservation of traditional channels of information reception by the population, such as television, radio, newspapers and magazines. Like other researchers, we have recorded stable indicators of television content consumption in previous studies. We believe that young people, when they watch TV channels, choose online versions of domestic and foreign TV channels. In our research, they were asked to respond to the consumption of the traditional form of television through TV receivers.

The answers to the question “What programs do you like on TV and radio stations?” were expected by the researchers. As it was indicated in the previous question, 95 doctoral students and 27 graduate students answered that they watch little or no television programs. Here the survey participants were offered to choose one of the following answers: musical and entertainment; educational; movies; news, sociopolitical. As a result, 37% of respondents indicated that they watched news and sociopolitical programs; 31% musical entertainment; and 19% movies. Only 13% of doctoral and graduate students watched educational content (Figure 5).

The data once again confirm that the interests of half of today's Kazakh youth are directed towards entertainment content—31% music and entertainment, plus 19% movies. We believe that this is the reason why Kazakh society is actively discussing the declining role of domestic TV channels in the upbringing and socialization of the younger generation. The older generation draws the attention of the public and

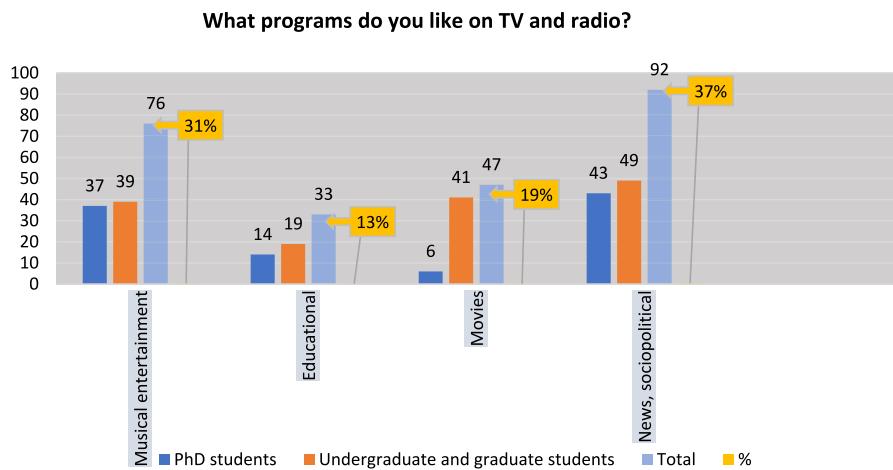


Fig. 5 TV and radio program consumption.

government bodies to the low cultural and aesthetic value of television programs produced and broadcast by large TV channels, which are fully funded by the state budget. In pursuit of ratings, they fill the air space with low-brow entertainment programs that have no educational and enlightening load. Whereas taxpayers' money should be used to strengthen young people's sense of duty to society, people and the state (Issabayeva 2023).

In response to inquiries about paper book reading and preferred Internet resources, 110 doctoral students provided insights on over 140 Internet sites. Seven resources

The most popular sites, PhD students

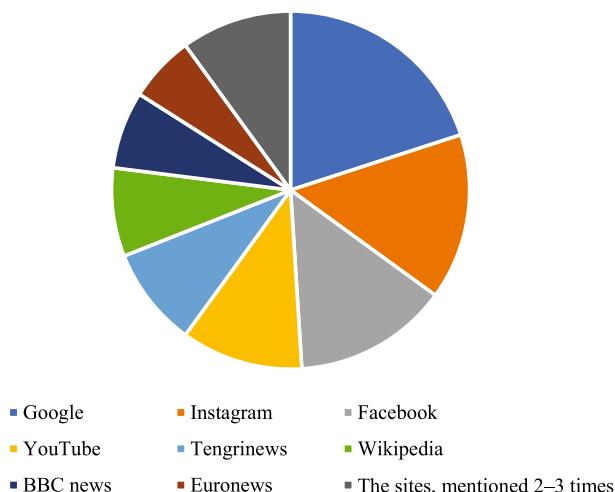


Fig. 6 Prevalent websites among doctoral students.

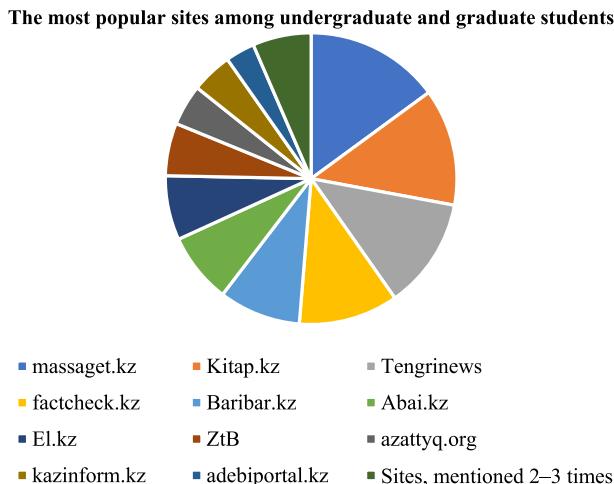


Fig. 7 Preferred websites among undergraduate and graduate students.

were recurrently mentioned, with usage ranging from 6 to 20 times: Google (20), Instagram (15), Facebook (14), YouTube (11), Kazakh news portal Tengrinews (9), Wikipedia (8) and BBC News (7), with Euronews mentioned 6 times (see Figure 6). Additionally, educational platforms such as Abai.kz, abaikunanbaiuly.enu.kz, Adilet.zan.kz, Blm.kz, Kundelik.kz and Lugat.kz were prominent among the frequently cited sites, alongside international educational platforms like Britishcouncil.org, Cambridge.org, Casereport and Chess.com.

Graduate students exhibited a more extensive and diverse array of Internet resources compared to doctoral students, with over 230 distinct sites identified, although with lower repetition frequency (see Figure 7). Notably, graduate students, in contrast to their doctoral counterparts, demonstrated a higher inclination towards using Kazakhstani entertainment and educational Internet resources. Some examples include massaget.kz (23 mentions), Kitap.kz (20), Tengrinews (19), factcheck.kz (17), Baribar.kz (14), Abai.kz (12), El.kz (11), ZtB (9), azattyq.org (8), kazinform.kz (7), aedebiportal.kz (5, a literary portal in Kazakh), among others. Meanwhile, participants in the undergraduate group frequently cited global platforms such as Wikipedia (11), Instagram (10), Google (9), YouTube (9), Facebook (8), BBC News (6) and Yandex.ru (6).

Preliminary findings suggest that younger participants exhibit greater engagement with the Kazakh language compared to the older age group (doctoral students), as supported by data on paper book reading. When asked about the number of paper books read in the last year, 191 out of 248 respondents confirmed their reading activity, whereas 57 reported not reading paper books. Unfortunately, 23% of young students (nearly one in four) did not engage in paper book reading.

In the past year, respondents collectively read 367 books, averaging 1.9 books per person. The language distribution of these books was 33% in Kazakh, 64% in Russian and 3% in English. Further analysis revealed that 50% of graduate students read

fiction in Kazakh, whereas only 15% of doctoral students engaged in Kazakh book reading.

Respondents often mentioned famous classic works of Kazakh writers such as *Abay's Way* and *The Dashing Year* by Mukhtar Auezov, *Blood and Sweat* by Abdizhamil Nurpeisov, *Botagoz* by Sabit Mukanov, *Love and Happy Years* by Azilkhan Nurshayikov, *The Red Arrow* by Sherkhan Murtaza and others. Among the world's famous works, *War and Peace* by Leo Tolstoy, *Arc de Triomphe* by Erich Remarque, *Portrait of Dorian Gray* by Oscar Wilde, *Flowers for Algernon* by Daniel Keyes, *The Master and Margarita* by Mikhail Bulgakov, *The White Steamboat* by Chingiz Aitmatov and others were also often mentioned by the participants. In addition to fiction, there were many motivational books on business, psychology and self-development. About 10% of respondents preferred popular science and historical literature. In general, the number and list of books read showed that interest in paper books decreases every year (Mayskaya 2021).

Not only experts, but also the highest officials of the state, speak about this alarming fact. At a regular meeting of the National Kurultai, the President of Kazakhstan expressed concern about “the dominance of foreign books on the Kazakhstani market—90% of fiction comes from abroad.” He urged not to allow “smartphone to replace a book for a child.” In his opinion, only “a reading nation can become truly intellectual and it is necessary to awaken the younger generation's interest in reading books.” In his speech, he shared his dream “to build a presidential library, which would work 24 h a day, where visitors would have the opportunity to familiarize themselves with both fiction and special literature published all over the world.” We hope that the President of Kazakhstan will be able to realize his dream and open such a modern library (Tokayev 2023).

When analyzing the results of the study, the authors took into account the qualitative composition of its participants, which consisted of educated young people. If these data are extrapolated to the rest of young people, the reading rates can be reduced by two times (Youth and Education 2021).

All these results suggest the idea of accelerated temporality of sources of information acquisition, which we associate with the rapid development of communication technologies on the Internet. Even educated Kazakh youth are rapidly losing the skills of traditional reading (paper books), switching to another language and choosing to read from a screen. We are concerned about the decreasing share of young people reading literature in their native language, choosing mainly Russian or English.

Discussion

In general, respondents noted that while the digital format is convenient for exploratory reading, paper books offer more pleasure and aid in better memorization. Despite the trend of growing consumption of visual formats (videos, pictures, infographics, memes, presentations and others), our research has shown that rapid technological progress has not reduced the preference of Kazakh youth to read paper books.

Our research has revealed Kazakh youth's information consumption preferences and language choices, particularly emphasizing their active engagement with Internet resources and social media. A survey confirmed that the Internet and social media hold a central role in their daily activities. A notable finding is the validation of the hypothesis that the majority of young individuals invest a considerable amount of time in online activities, with graduate students displaying a higher level of Internet usage compared to doctoral students. Many participants dedicate over seven hours to online activities daily, underscoring the substantial involvement of the youth in social platforms.

While the Internet and social media serve as integral components of young people's lives, facilitating communication and content creation, there is a need to educate the younger generation on effective time management to mitigate potential negative impacts on health and intellectual development. It is worth drawing attention to the fact that the use of the Internet cannot replace traditional forms of information acquisition, such as reading paper books. Despite the active use of digital resources, some respondents still continue to turn to printed materials.

The survey yielded insights into the information preferences and linguistic inclinations of Kazakh youth. Analysis of the data revealed a greater propensity for the use of Kazakh among the younger demographic (undergraduate and graduate students) compared to the older age group of doctoral students. These findings can inform the development of media and educational strategies and programs focused on optimizing Internet usage while mitigating potential adverse effects on the younger population. A predominant trend identified through the survey is the Internet's central role as a primary source of engaging content for Kazakh youth. It serves as a crucial avenue for information and entertainment, with young individuals leveraging online platforms for socializing, gaming and video consumption, indicative of the growing significance of entertainment content in the digital landscape.

Despite the Internet's prevalence, the study underscores that educational purposes and book reading are not the primary drivers for Internet usage among the majority of participants. Over 70% of respondents predominantly rely on Internet resources as their primary information source, while textbooks and books play a comparatively less prominent role. Only 17% of participants cited using the Internet for educational and reading purposes, indicating a diminishing interest in educational resources among Kazakh youth.

TV channels are experiencing a decline in popularity among Kazakh youth, with 32% of survey respondents reporting a lack of engagement with traditional TV channels, signaling a preference for online media alternatives. Among traditional TV viewers (52%), entertainment content—encompassing music, entertainment programs and films—holds the greatest appeal. It is noteworthy that societal discussions reflect dissatisfaction with the perceived low cultural value of television projects in light of these changes.

An intriguing observation emerges regarding the divergent preferences in popular Internet resources between two distinct groups—doctoral students and graduate students. Google, Instagram, Facebook and YouTube feature prominently among doctoral students' top-four choices. In contrast, graduate students exhibit a higher reliance on Kazakh resources, such as massaget.kz, Tengrinews, Kitap.kz and

factcheck.kz; Wikipedia, Instagram, Google and YouTube follow. The responses from graduate students also highlight their interest in Kazakhstani educational and outreach resources.

In summary, the obtained data indicate a shift in the interests and preferences of Kazakh youth towards entertainment content, with the Internet emerging as their primary information source. To enhance the linguistic environment, cultural richness and spiritual discourse, strategies targeting the older generation should be developed. These strategies should aim to engage young individuals with educational and enlightening resources while concurrently addressing the need for improved content quality in the online sphere.

Conclusion

Digital technologies have instigated profound transformations in various facets of our lives, notably within the realms of education and reading culture. While these technologies bring forth novel opportunities for learning and information exchange, they concurrently present challenges to conventional modes of education and reading.

It is imperative to emphasize that digital technologies do not serve as a substitute for traditional forms of reading; rather, they act as complementary entities. These technologies introduce innovative avenues for interacting with information and learning, particularly appealing to the younger demographic. The interactive features inherent in digital devices, for instance, captivate readers, and the incorporation of visual elements enhances comprehension.

Our research affirms the hypothesis that Kazakh youth are progressively inclined towards digital formats for information consumption, distancing themselves from traditional print media and utilizing their native language less frequently in communication. This preference is attributed to the advantages of the digital format, including swift information retrieval and heightened motivation.

Despite these advantages, digital reading is not without its drawbacks. It often fosters a superficial grasp of the material, diminishing levels of comprehension and the overall enjoyment derived from reading. In contrast, the traditional reading of paper books fosters in-depth understanding, memorization and heightened emotional engagement. In essence, digital reading forms do not merely supplant their paper counterparts; instead, they usher in a new interactive paradigm with diverse functionalities. This shift reshapes cultural preferences among users and proves economically enticing for authors across various genres.

The present study has illuminated a decline in interest in reading books and literary works among undergraduate, graduate and doctoral students as they increasingly rely on digital devices. This underscores the imperative for further investigation into the impact of digital technologies on reading culture and youth education in Kazakhstan. It is crucial to persist in the examination of digital technologies' influence on reading culture and education.

In conclusion, it is essential to acknowledge that in the evolving digital landscape, maintaining a balance between digital and traditional forms of reading is paramount to ensuring the quality assimilation of information. This necessitates

continued exploration and comprehension of the influence of digital technologies on reading culture and education, accompanied by the formulation of effective strategies to bolster reading culture in the digital era.

Limitations and Suggestions for Future Research

In this study, the authors conducted a survey with a limited cohort of student youth in Astana. Subsequently, they express the intention to expand the study, encompassing a larger participant pool across at least five territorial units (regions) of Kazakhstan. This extended sample is anticipated to provide a more precise evaluation of both quantitative and qualitative shifts in the language preferences of Kazakh youth, further fortifying the evidentiary foundation of their hypothesis.

Despite inherent limitations, notably the restricted sample size, this research represents one of the pioneering studies in Kazakhstan, examining the information consumption patterns of young individuals and delineating the language preferences of the contemporary youth demographic. The authors anticipate that their findings will contribute to the body of knowledge for scholars, both domestic and international, delving into the study of linguistic transformations influenced by digital technologies.

The discernible decline in young people's engagement with print content, coupled with the escalating disparity between the consumption of electronic and print products, underscores the substantial impact of information and communication technologies on the country's populace. Consistent outcomes observed among Kazakh youth, as well as their counterparts in other countries, underscore the global nature of these transformations that can be extrapolated beyond specific national contexts. Subsequent research endeavors should persist in investigating young people's information consumption across diverse media platforms and exploring potential implications for the spiritual and physical well-being of the youth demographic.

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References

Baron, Naomi. 2015. *Words Onscreen: The Fate of Reading in a Digital World*. Oxford University Press.

Baron, Naomi. 2016. "Do students lose depth in digital reading?" *The Conversation*. Last modified July 20, 2016. <https://theconversation.com/do-students-lose-depth-in-digital-reading-61897>.

Isabaeva, Saule. 2023. "State TV in Kazakhstan: Why is it uncompetitive?" *Network edition of QMonitor*. Last modified February 7, 2023. <https://qmonitor.kz/society/4716>.

Kump, Peter. 1998. *Breakthrough Rapid Reading*. Prentice Hall Press.

Lebedeva, Maria, Ksenia Vergeles, Olga Kupreshchenko, Ludmila Zhiltsova, and Tatyana Veselovskaya. 2020. "The Russian schoolchildren's digital reading: Factors affecting medium preferences and self-evaluation of digital reading practice." *Science for Education Today* 10(6): 252–271. <https://doi.org/10.15293/2658-6762.2006.14>.

Leesmonitor. 2016. *Digitaal lezen, anders lezen? Issuu*. Accessed December 20, 2022. https://issuu.com/stichtinglezen/docs/leesmonitor1-2016_lr.

Lizunova, Irina, Adriaan van der Weel, Loida Garcia-Febo, and Yevgenia Pshenichnaya. 2020. "Reading on paper and screens? Advantages, Disadvantages and Digital Inequality." *Bibliosphere* 3: 45–57. <https://www.bibliosphere.ru/jour/article/view/1686/1690>.

Lombina, Tamara, Valeriy Mansurov, and Olesya Yurchenko. 2019. "Problems of Reading in the New Digital Reality." *Sociological Science and Social Practice* 4: 97–110. <https://doi.org/10.19181/snp.2019.7.4.6803>.

Mangen, Anne, and Adriaan Van der Weel. 2016. "The Evolution of Reading in the Age of Digitization: An Integrative Framework for Reading Research." *Literacy* 50(3): 116–124. <https://doi.org/10.1111/lit.12086>.

Mayskaya, Yuliya. 2021. "Why Do People in Kazakhstan Read Little?" Kazakhstan Center for Analytical Research "Eurasian Monitoring". Last modified October 28, 2021. <http://ea-monitor.kz/ekspertnyy-vzglyad/5-knig-v-god-pochemu-zhiteli-kazahstana-malo-chitayut-i-kak-etu-situaciyu-izmenit>.

McVicker, Claudia. 2017. "Last Child in the Library? A Survey of Use of E-books versus Traditional Books." *Children and Libraries (CAL)* 15(4): 4–7. <https://journals.ala.org/index.php/cal/article/view/6505/8643>.

Melentieva, Yulia. 2019. "Digital Reading: Genealogy of Formation and Prospects for its Development in a Digitalized Society." *Bibliosphere* 4: 14–21. <https://cyberleninka.ru/article/n/digital-reading-genealogy-of-formation-and-prospects-for-its-development-in-a-digitalized-society/viewer>.

Pennington, Martha, and Robert Waxler. 2017. Why Reading Books Still Matters: The Power of Literature in Digital Times (1st ed.). Routledge. <https://doi.org/10.4324/9781315210247>.

Roskos, Kathleen, and Susan Neuman. 2014. Best Practices in Reading: A 21st Century Skill Update. *The Reading Teacher* 76(7): 507–511. <https://doi.org/10.1002/trtr.1248>.

Statista. 2022. "Volume of data/information created, captured, copied, and consumed worldwide from 2010 to 2020, with forecasts from 2021 to 2025." <https://www.statista.com/statistics/871513/world-wide-data-created/>.

Stavanger Declaration Concerning the Future of Reading. 2018. Accessed June 11, 2023. <https://ereadcost.eu/stavanger-declaration/>.

Tokayev, Kassym-Jomart. 2023. "Remarks at the Second Meeting of the National Kurultai." Akorda. Accessed June 22, 2023. <https://www.akorda.kz/en/remarks-by-president-kassym-jomart-tokayev-at-the-second-meeting-of-the-national-kurultaijust-kazakhstan-responsible-citizen-1752616>.

Volkov, Denis, and Stepan Goncharov. 2019. "Russian Media Landscape 2019: Television, Press, Internet and Social Media." *The Russian Public Opinion Herald* 2(129): 42–55. Levada-Center. Accessed October 20, 2022. <https://www.levada.ru/2019/07/01/dosug-i-razvlecheniya/>.

Way, Amy, and Shawna Malvini Redden. 2017. "The Study of Youth Online: A Critical Review and Agenda." *Review of Communication* 17(2): 119–136. <https://doi.org/10.1080/15358593.2017.1293838>.

Wolf, Maryanne. 2017. *Proust and the Squid: The Story and Science of the Reading Brain*. Harper Perennial.

Yessenbekova, Ulbossyn. 2020a. "Social Media and Slacktivism in Young People's Life." *Media Watch* 11(3): 515–524. <https://doi.org/10.15655/mw/2020/v11i3/202950>.

Yessenbekova, Ulbossyn. 2020b. "The Cultural and Educational Mission of Kazakh Television." *Media Watch* 11(4): 721–727. <https://doi.org/10.15655/mw/2020/v11i4/204632>.

Youth and Education. 2021. “International Research Project “FES Youth Studies”. Research materials of the Friedrich Ebert Foundation. Accessed June 22, 2023. <https://library.fes.de/pdf-files/bueros/kasachstan/18534.pdf>.

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