

The impact of digital and internet technologies on language development

El impacto de las tecnologías digitales e internet en el desarrollo del lenguaje

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Abstract

The article is devoted to studying the development of languages under the influence of computer technology. The article aims to determine the impact of digitalization and other factors on the development of Ukrainian and English languages. The study's central hypothesis is that digital technology has significant language development. To empirically confirm this hypothesis, a survey of Internet users was organized, who expressed their opinions about the use of new words (words of foreign origin and slang words) in the

process of communication. The study results showed that digital technology impacts language development, but users' vocabulary is expanding following the scope of digital technology. In particular, young people, even having a good knowledge of English, do not know business slang, while the mature generation has almost no knowledge of youth slang originating from entertainment. This study has practical significance for philologists and digital technology professionals who are looking for accessible methods of communication by expanding the speech vocabulary with words of computer origin.

Keywords: neologism, slang, digitalization, communication, social media, language.

Resumen

El artículo está dedicado a estudiar el desarrollo de los idiomas bajo la influencia de la tecnología informática. El artículo tiene como objetivo determinar el impacto de la digitalización y otros factores en el desarrollo de los idiomas ucraniano e inglés. La hipótesis central del estudio es que la tecnología digital tiene un desarrollo significativo del lenguaje. Para confirmar empíricamente esta hipótesis, se organizó una encuesta a usuarios de Internet, quienes expresaron sus opiniones sobre el uso de nuevas palabras (palabras de origen extranjero y palabras de la jerga) en el proceso de comunicación. Los resultados del estudio mostraron que la tecnología digital afecta el desarrollo del lenguaje, pero el vocabulario de los usuarios se está expandiendo siguiendo el alcance de la tecnología digital. En particular, los jóvenes, aún teniendo un buen conocimiento del inglés, no conocen la jerga de negocios, mientras que la generación madura casi no conoce la jerga juvenil proveniente del entretenimiento. Este estudio tiene un significado práctico para los filólogos y profesionales de la tecnología digital que buscan métodos accesibles de comunicación mediante la ampliación del vocabulario del habla con palabras de origen informático.

Palabras clave: neologismo, argot, digitalización, comunicación, redes sociales, lenguaje.

1. Introduction

No language in the world is a constant, unchanging construction of words and phrases. Therefore, it develops and is supplemented with new words and changes under various factors. This is influenced both by languages of international use, such as English, and by national languages of any country that is not popular worldwide - such as Ukrainian.

Language development today is most determined by digitalization, which has permeated all spheres of life. Today, the majority of the population of any developed or developing country uses social networks for entertainment and the Internet for work. Global processes promoting international trade development lead to the spread of international communication languages in business processes. Nowadays, knowledge of a foreign language, particularly English, is an essential factor for Ukrainians to get a highly paid job. Therefore, it is not surprising that under the influence of global processes, both

foreign language and digital technologies are used in the organization of international communications, which directly impact the development of language. Such communication processes use a vocabulary of common words that become understandable to all participants in business relations or communications. Phrases become shorter, and grammatical and syntactical rules of sentence formation change. Undoubtedly, we can say that digitalization affects language development, but it is only a hypothesis that requires empirical research and evidence.

This study aims to assess the impact of digitalization on the development of Ukrainian and English.

2. Literature overview

The problem of digital technology's impact on language development overall, and individual world languages, in particular, is relatively new in linguistics and has not yet been sufficiently studied. However, we can already identify several significant studies on this and related topics. The first works in this field began to appear in the 1980s. In particular, the article by Baron N. S (1984), a well-known researcher from Brown University, "Computer Communication as a Force Changing Language. "Later, Baron devoted several full-fledged monographic studies to this problem, among which it is worth mentioning "Always connected: language in the world of Internet and mobile communication" (Baron, 2010).

The work of Gao L. (2006) on the changes in the Chinese language under the influence of computer communication and the Internet deserves attention. Another interesting, in our opinion, work is the article by Panyushkina O. (2014). "Language change under the influence of social networks (on the material of Spanish) ."Although this study considers only the Spanish language and reveals several specific features of communication in Spanish-language social networks, the author still makes several interesting generalizing conclusions:

Language is not a static set of words and depends on many processes occurring in the society of its speakers. The development of language is a natural process.

Digitalization plays a significant role in language development. The main consequence of digitalization is the formation of neologisms that form new concepts (Internet, e-mail, browser, server).

The emergence of neologisms affects both phonetic and grammatical aspects of the language, abbreviations, orthography, punctuation, etc., become widespread.

The most significant influence of information technology on the development of languages is in the formation of neologisms directly related to the computer sphere (Chatfield, 2013). So in the last few decades, such new words as avatar, hashtag, trolling, meme, spam,

lol, geek, etc., have appeared in the English vocabulary. All these words are slang not only in English but also in Ukrainian, especially among people who actively use social networks or work in the field of digitalization.

Thus, we can talk about the determining role of the extralinguistic factor - the development and mass distribution of information technology in the formation of language.

New digital words can be called differently in the scientific literature. In addition, researchers take different approaches to dividing the entire vocabulary into components: historical, formed by social networks, and remote work.

A chronology of digital neologisms:

- words and phrases that have existed since the advent of digital technology and are ingrained in each of these languages (computer, program, data, language, keyboard, programming);
- words and phrases that have appeared relatively recently (in the last 10-20 years) as a result of the emergence of new concepts (social networks, content, selfies, like);
- obsolete lexical units, connected with technologies that have gone out of use (diskette, ICQ, modem).

Neologisms of social networks:

- Internet memes are one of the most used sources of neologisms' appearance in both English and Ukrainian languages (Shchurina, 2012; Bauckhage, 2011). In addition, researchers of this phenomenon note that the ironic culture of Internet communication generates a vast number of new vocabularies, the use of which often goes beyond the Internet (in particular, most young people use such words as cringe, thrash, and slay in their usual environment).
- Abbreviations and emojis deserve a separate mention. They emerged under the influence of the widespread development of mobile communications and the rapid input of messages, for the exchange of which there are now many popular services (WhatsApp, Facebook Messenger, etc.). Among the consequences of this influence are the emergence of new acronyms, the widespread use of symbols, hashtags, emoticons instead of letters and words, etc. Furthermore, the desire to save time in everyday communication by typing leads to severe changes in the structure of orthography, punctuation, and grammar of the language. And this applies to the English and Ukrainian languages.

The neologisms of remote work. The development of digital technologies allowed the whole world to survive the Covid-19 quarantine restrictions successfully. A few months later, many production processes were switched to remote, which influenced the emergence of a new culture of communication via video conferencing. In this aspect, digitalization helped people quickly establish communications through meetings and calls

and set clear work deadlines and the amount of work to be done at home. That is how words such as meeting, call, and estimate without their Ukrainianized translation appeared in the active use of Ukrainian vocabulary.

Nowadays, the global Internet space creates a special multilingual and multicultural environment, where neologisms and new words and phrases are actively forming. The study of the Internet language is a separate scientific direction initiated by British researcher David Crystal (2001) and actively developed in Ukraine and other countries on the example of national languages. The international Internet community takes an active part in analyzing, disseminating, and popularizing these words. There are even constantly updated dictionaries of neologisms and Internet slang in the online space, which explain the meaning of words that are popular among young people (Pyrkalo, 1998; Stavytska, 2003).

Our research on scientific literature about the digital influence on language has led us to several conclusions:

- The emergence of new words is due to the emergence of new objects, phenomena, and concepts.
- Simplification of languages occurs for the sake of the economy of linguistic means in communication through the use of Internet messaging services, mobile communications, video telephony, etc.
- Globalization and internationalization of the world's languages occur through the Internet, which simplifies international communication.
- The spread of Internet culture, the popularity of memes, and cultural phenomena specific to the Internet community impact language as a tool of online and offline communication.

At the same time, it is still debatable whether the emergence of new words is a consequence of digitalization or globalization. The question of whether digital technology can enrich the language or whether it becomes more universal and international remains also open. All these questions will be explored in this study by an empirical method.

3. Methods and methodology

The methodological basis of the work was the research of scientists devoted to English and Ukrainian lexicology. During the study, descriptive, structural, and comparative methods were used. In determining the meanings of words, component analysis was used.

The study aims to test the empirical way of the hypothesis that digital technology affects the formation of language. To achieve the goal, the following tasks were carried out during the study:

- tested whether new slang words emerge more through digitalization than through globalization processes;
- determined the attitude of society to the problem of the impact of computer technology on language;
- verified whether the use of new slang words occurs more by the younger generation rather than the mature generation;
- identified the primary sources of vocabulary formation of everyday speech;
- it was checked whether the knowledge of English influences the understanding and use of slang language.

To conduct an empirical study, an online survey was organized, which was conducted from August 10-20, 2022. Fifty residents of Ukraine, who use the Internet, took part in the survey. Google Forms were used to organize the study, and links to the survey were distributed through social networks and messengers. The study's main audience was people aged 30 to 50 years. As a rule, people of this age form a sample of the employed population.

Since participation in the survey was voluntary and unobtrusive, we can conclude that the respondents' answers reflect the part of society for which this topic is essential. Other Internet users, who did not want to respond to this survey, are not socially active in networks or are not interested in sociological opinion.

The author's survey methodology highlighted common behavioral phenomena among people using social networks. In creating the methodology, several complex methodological problems were solved. First, a list of questions was formed, which had to be exciting and not alienate the average user from the survey. Specifically, Internet users were asked 12 questions:

- Your age?
- How do you rate your vocabulary?
- Do you often read fiction?
- Do you know one or more foreign languages at least at an average level?
- How often do you use social media to communicate?
- Do you use slang words in your everyday life?
- Do you use foreign language words in your everyday life?
- How do you feel about foreign and slang words in everyday language?
- Where do you get your vocabulary of foreign and slang words from?
- Do you know the meaning of the following slang words: trash (треш), crunch (крінж), slay (слей)?
- Do you know the meaning of the following words: feature (фіча), backup (бекап), update (апдейт)?
- Do you know the following business words: meeting (мітинг), call (кол), estimate (естімейт)?

Selecting these questions would answer the following questions:

- Identify the primary audience of individuals concerned about the issue of slang words and, in particular, determine how acute the problem is in the community. To do this, the results of the study should be based on the distribution of the audience by age (question #1) and the number of responses "Indifferent" or "Negative" to question #8, as well as the rate of use of slang words in normal conversation (question #6,7).
- Identify the main sources of language formation in society and determine the importance of social networks in forming vocabulary. To do this, it is necessary to rely on the indicator of the activity of reading fiction (question #3), which is certainly a source of language formation, as well as the answers to question #9.
- To determine the extent to which knowledge of a foreign language affects vocabulary formation. To do this, rely on the answers to questions #2,3,4,5,7.
- Determine which slang words are common to people of all ages. To do this, compare the results of answers to questions 1, 10, 11, and 12.

The questions were composed to cross-check the truthfulness of the results and exclude those answers that contradicted each other.

4. Research results

For empirical research, the author's team initiated an Internet audience survey. It is important to note that the form of the survey was made public on social networks with a wide age audience. Still, the adult population was more willing to participate in the study of the computer's impact on language. It indicates that this issue is not significant among young people, as it does not cause conflicting feelings and, consequently, a heightened interest.

As a result, most of the audience is represented by people from 30 to 50 years, formed by part of the employed population (Figure 1).

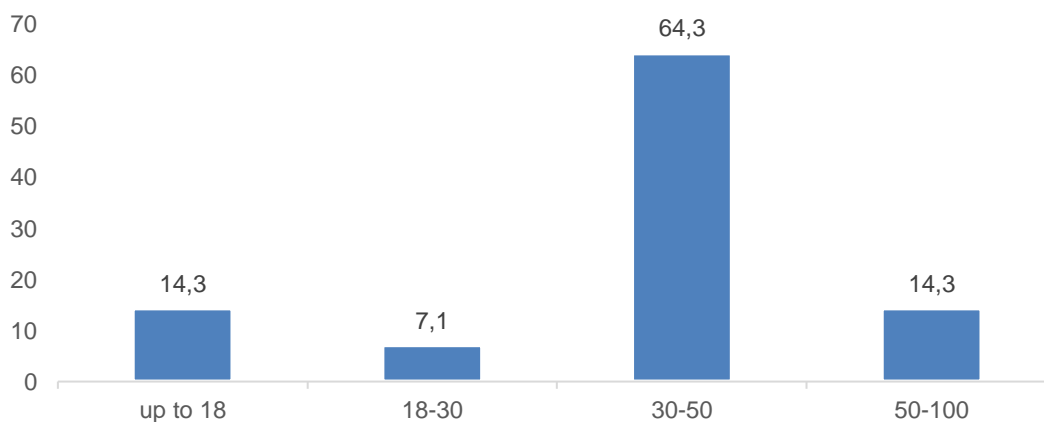


Figure 1. Age structure of the audience participating in the survey.

According to the classical theory of human speech development, regular communication and fiction reading are of great importance in vocabulary formation. Moreover, the more people read fiction, the wider is their vocabulary (Hoover & Gough, 1990; Vellutino et al., 2007). This study verified the hypothesis that reading books contribute to vocabulary expansion, and therefore most of the fiction readers interviewed have no problem with finding words on any topic (Figure 2).

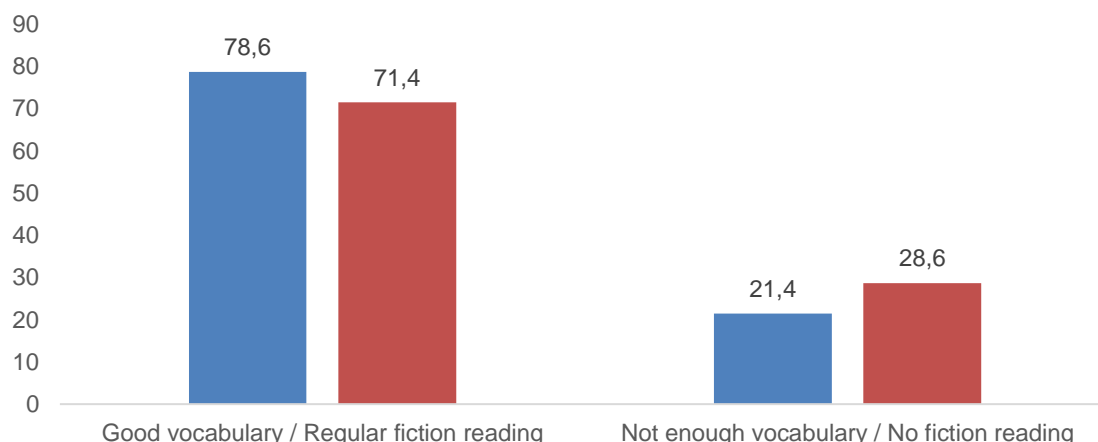


Figure 2. Dependencies between language skills and reading fiction.

The study found that 71.4% of respondents regularly read fiction, and about 28.6% noted that they get the necessary information from the Internet. Accordingly, 78.6% of respondents do not have problems with the dictionary and do not lack words in communication.

At the same time, the majority of Ukrainians (85,7%) actively communicate on social networks. However, only 14,3% of respondents rarely use social networks to communicate (Figure 3). Analysis of the survey results shows that to a greater extent, these answers are represented by the audience of the older generation.

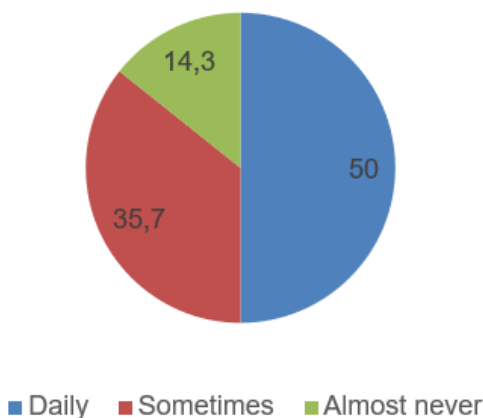


Figure 3. The use of social networks in everyday life.

In the context of globalization, the population's business activity is determined by the need to learn a foreign language, including English. The people of Ukraine actively migrate to work in different countries and works remotely in international companies. Hence, a significant part has an average knowledge of at least some language. Among the respondents, 57.1% answered that they have at least an intermediate understanding of a foreign language, which is the primary source of slang words and words of foreign origin (Figure 4).

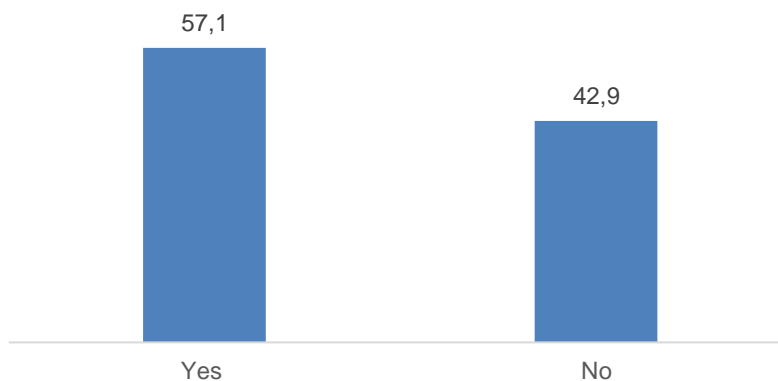


Figure 4. Assessment of foreign language skills.

Vocabulary enrichment with slang (non-literary) words happens to a greater extent in the process of live communication with young people, as well as through the information consumption from social networks (Figure 5). Many adults learn new words in the process of communication with their children, who overwhelmingly know most of the slang words used in social networks.

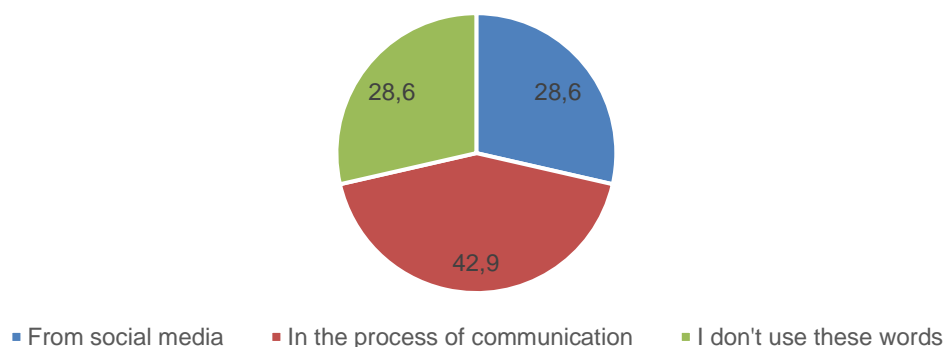


Figure 5. Sources of vocabulary enrichment with slang and foreign words.

Given that most of the audience is formed by the adult generation, it was interesting to confirm their attitude toward the use of slang words in everyday life. The majority of respondents showed that they have a positive attitude towards the addition of slang words to their speech. At the same time, some respondents (22%) believe it is a negative

phenomenon associated with excessive Americanization. About 36% of respondents do not consider the appearance of new slang words and words from the digital world as a problem (Figure 6).

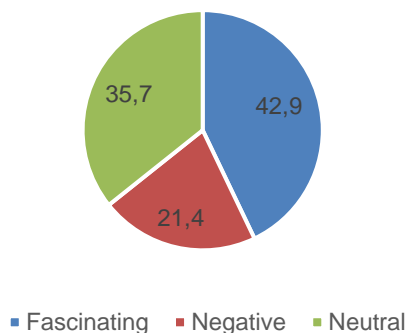


Figure 6. Attitudes toward the use of slang and foreign words in everyday life.

Respondents were asked if they knew some slang words used in youth, computer, and business environments that helped to test the survey results (Figure 7).

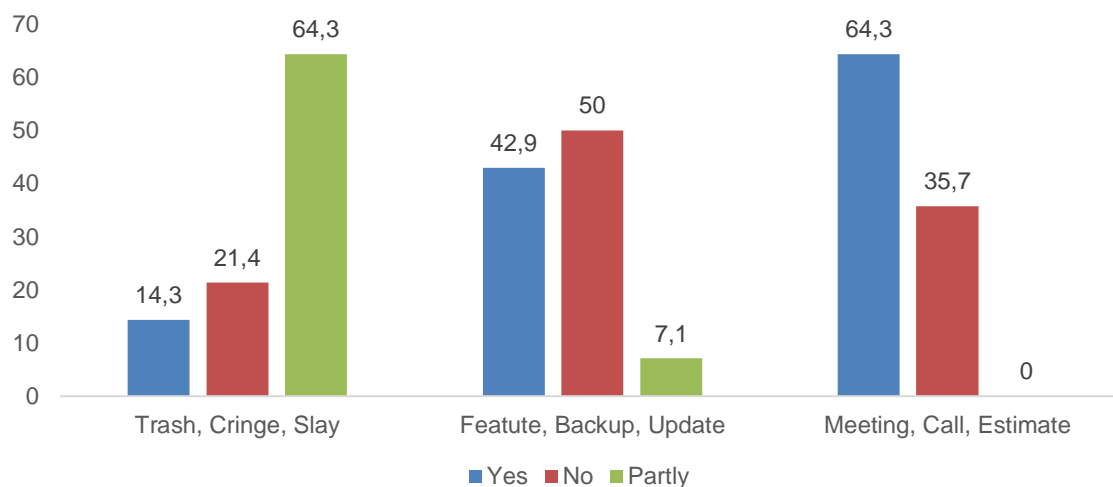


Figure 7. Understanding and using slang words in everyday life.

The study's results showed that, in general, young people know and use youth slang as they actively use social networks. As for the adult population, they mostly understand the words of business speech and partially understand the specific words of computer terminology.

5. Discussions

The study investigated whether the emergence of new words is a consequence of digitalization or other processes. Empirical research has shown that the primary source of new words is more social networks than foreign languages because there are

significantly more people who use social networks than people who speak foreign languages. Kuznetsova & Vahromova (2009) believe that no other area of human activity, except medicine, can compete with the sphere of computer technology regarding neologisms emerging. Both Ukrainian and English are significantly affected by informatization. Today English is not just an international language but the main language of the Internet and the most significant "supplier" of neologisms, connected with information technologies (to google - in Ukrainian "гуглити"; to log in – "залогінітись"; to photoshop, "відфотошопити", to friend- "зафрендити", to tweet – "твітнути" (Urban Dictionary (n/d); Collot & Belmore, 1996; Havlyuk, 2003). Souza et al. (2018) believe that the formation of such words is so great that they can form their digital language, which has long been the object of research by many software linguists looking for effective ways to interact with each other.

At the same time, computerization and digitalization have a direct and indirect impact on language. In particular, the indirect ways of influencing language are through globalization and the popularization of the American language globally (Hans, 2017).

Analysis of people's attitudes towards the emergence of new words showed that it is mostly positive, but some consider words from the digital world a negative phenomenon (Liu et al., 2019). According to the study by Maulidiya et al. (2021) and Golovanova & Yakimenko (2019), most of the younger generation actively uses slang in everyday life. At the same time, young people use slang not only during communication on social networks but also when they hang out with friends. Most young people believe that slang is better perceived by their peers than literary language, and the use of such words helps to form a reputation of a modern person and friendly relations. This fact confirms that communication in social networks stimulates speech development through the appearance of slang words. At the same time, literary language in everyday life becomes a sign of non-modernity and conservatism (Maulidiya et al., 2021).

In this case, there is a discursive moment when a certain part of the population and scientific researchers believe that using martial words weakens the value of the national culture and language (Semeniuk et al., 2020). There is a so-called process of Americanization of a weaker language, which can be seen not only in the Ukrainian language but also in other languages worldwide (Chaoyuan, 2016; Hjarvard, 2003). In general, the Ukrainian language, through rapid globalization, is losing its identity under the influence of information technology, and literary language in correspondence is used quite rarely - only as business correspondence.

It should be noted that the use of slang words generally does not depend on a person's social status or age. However, the list of these words is determined by the type of activity of the person on the Internet. In particular, people of working age, who have a regular jobs, have in their vocabulary foreign-language words necessary for the organization of work. In turn, young people practically do not understand business slang words and partially understand computer slang words. To know and understand certain slang words,

people need to be in the appropriate environment where they are used or to use slang word interpreters.

Most Ukrainian neologisms are formed by adding suffixes and endings to an existing English word, so they can often be recognized and understood in conversation. But there are also cases when it is impossible to understand their meanings without special interpretation, even with an average knowledge of English. The most widespread way of enriching the Ukrainian language with the vocabulary of information technology is borrowing, mainly from English. However, there is also a certain share of originally formed words and phrases, many of which act as synonyms.

6. Conclusions

According to the results of the study, we can conclude that digital technology does affect the development of speech. However, this is not the only influential factor. The factor of globalization is also essential, which manifests itself in the spread of English in all spheres of life, in particular business processes and the sphere of entertainment. The study's results showed that, in general, the young population is neutral to the emergence of new words, while older people have an ambiguous attitude. It happens because American words gradually displace the national, so the so-called process of Americanization of national languages takes place. The study's results also show that the use of slang words does not depend on age but more on the environment in which a person is. In particular, young people who use social media for entertainment have youth entertainment slang in their vocabulary. While the adult generation more often uses business slang, which is incomprehensible to young people. As for the direct impact of digitalization on language development, it is carried out through the emergence of new concepts, objects, objects, and phenomena in the computer sphere. These words change the English language, and then they are borrowed in other languages. At the same time, the words or phrases can remain unchanged or be modified according to the rules of construction of the corresponding part of speech responsible for the state of the object, its description, action, or characteristic. International communication, carried out using digitalization, is also important in language development. People who know foreign languages use in conversation words of foreign-language origin.

The practical significance of the research lies in its use by philologists and programmers to build unified communication dictionaries.

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