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## **Information and Communication Activity of Students When Writing a Course Work on Linguistics**

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**Abstract**--The experience of using information space in the process of students' work over a course paper in linguistics has been examined in the article. The importance of information and communication technologies in this type of educational activity is determined. There are three levels of students' information and communication activities depending on the development of the students' information competence and the involvement of information and communication technologies as the main and auxiliary resources for writing a course paper. Adaptive, productive and creative levels of information and communication activities are highlighted. The type of the above-mentioned student actively engages various online platforms for surveys, classifications and processing of the source base of research, etc. It is stressed that information resources are mostly used at the preparatory stage and less in the final one. The need to create a single information base of linguistic resources has been emphasized.

**Keywords**---information culture, language behavior, language corpus, learning foreign languages, linguistic competencies, linguistic disciplines, linguistic portals, linguistic research, youth slang.

## **Introduction**

The educational sector requires constant development and improvement of approaches to learning, ways of presenting material, motivation of students in order to implement a model of learning that meets modern requirements. At the same time, in institutions of higher education (IHE), the accents are shifted towards students' independent educational-cognitive and scientific work, which is manifested, in particular, in the dominating of independent cognitive activity, change of teacher's activity and students' position. The aspects mentioned before intensify the digitalization processes in modern education.

Foreign researchers record the active use of computer technology while studying at foreign universities, in contrast to Ukrainian higher education institutions. At the current stage, we observe that the development and availability of technology contribute to the gradual and essential expansion of didactic material. In teaching students, along with "traditional" textbooks and printed teaching materials, digital/technological ones are increasingly used in Ukraine: multimedia, interactive systems, web services, etc (Mathew, 2012; Ndimele, 2016; Salem, 2013).

## **Problem statement**

Today we feel significant competitiveness in education between traditional and information and communication (ICT) teaching materials. The latest educational trends lead to an active increase in the ICT use in education. In this case, any branch of education must successfully combine various ICT tools with conventional learning technologies, as the main purpose of learning is to maintain students' interest in the subject (Toms & O'Brien, 2008; Bykov & Mushka, 2009). Therefore, we consider it especially important to study the experience of ICT in philological study, where the increase of computer technology opens new horizons for linguistic research. Researchers note that the Internet has become an environment for the deployment of a communicative scenario of human development, including scientific one. Linguists around the world understand the importance of globalization and computerization of the scientific space processes.

## **Analysis of recent research papers and publications**

Presently, the problem of using e-learning tools in institutions of higher education has become especially important. Especially, the issue of using ICT for education reforming and informatizing is analyzed in the scientific works. Problems of successful ICT usage in higher education are of great interest not only to Ukrainian but also to foreign scientists. In modern pedagogical research, the concept of ICT is in the sphere of heterogeneous interpretations. The concept itself has several synonymous determinations: "information and communication technologies of distance learning", "computer technologies of learning",

“information technologies in learning”, etc. In the proposed study, we use the term “ICT”, which is interpreted, according to P. Obratsov, as a teaching process organized with the use of a set of fundamentally new tools and methods of data processing (teaching methods) which are implemented in the learning systems and are a purposeful creation, transmission, storage and display of information products (data, knowledge, ideas) at the lowest costs and in accordance with the patterns of students’ cognitive activity. Foreign scientists analyze mainly the impact of ICT on the effectiveness of the learning process and communication in general, as well as the impact of ICT on the methodology of learning foreign languages.

An important form of students’ independent research work and one of the practical methods of teaching in IHE is writing a course paper that forms the ability to use the acquired knowledge in practice and helps to master the skills of solving scientific problems based on practical facts. The course work helps students to solve cognitive problems, in particular, an assignment to identify their theoretical knowledge systematically, master the basic skills of research, comprehend a scientific problem independently and research it; the ability to collect, analyze and organize scientific and literature sources, the ability to apply knowledge in solving practical problems, formulate conclusions, and recommendations. To master it, the student must have certain information retrieval competencies that are a part of information competencies. Information competence is the students' ability to identify a problem independently, find ways to solve it, and to find the necessary information, the ability to formulate search requests, analyze and summarize the information found (Sipilä, 2014; Obratsov, 2000; Taguchi, 2015).

A. Khutorsky considers that information competence is the ability to search independently, analyze and select the necessary information, organize, transform, store and transmit it. According to researchers, writing course papers helps students to deepen their knowledge, instills skills in scientific research of problems, allows students to obtain the theory value of the research subject of future practical activities (Sharov et al., 2020; Chistyakova et al., 2017). The purpose of the article is to highlight the experience of using ICT as an important supporting resource in writing a course paper by students of a philological department that allows to identify the levels of information and communication activities of the student. Achieving the goal involves solving the following tasks: to outline the stages of the term work, to determine the main directions of using ICT in writing a term work in philology, to distinguish adaptive, productive and creative levels of information and communication activities of a student who masters philology. In general, quite a few works have been devoted to the analysis of using ICT experience in mastering philological specialties (Koval, 2009; Saukh & Chumak, 2018; Sultan, 2010). At the same time, linguists are actively studying the experience of using ICT to develop linguistic competencies of specialists in technical and other fields.

## **Method**

The research methodology takes into account the productive possibilities of ICT usage when students write course papers on philology, highlighting the author's

experience. Theoretical research methods are used in the work (analysis of the methodological base on the research problem, generalization of different views on the organization of educational activities while the process of course work (projects), generalization and systematization of personal practical experience) and empirical (review of the educational process, questionnaires) (Madrid, 2006; Spolsky & Hult, 2008; Shums'kyi, 2020).

## **Discussion**

Implementation of course paper is aimed at developing students' research competencies, the ability to navigate in the information space quickly, that is one of the conditions for the productivity of scientific work. Two interrelated features are to be taken into account while planning a course paper: planning the research process and its organization, and planning the composition of the course paper, presenting its results in the form of a text. Among the main objectives of the course paper, teachers single out the following:

- To deepen students' knowledge of current issues of the discipline;
- To develop skills of independent practical processing of sources and to use modern information means and technologies;
- To form research skills;
- To stimulate students to carry out independent scientific research;
- To develop students' ability to analyze scientific knowledge and make conclusions on the studied aspects;
- To form the ability of practical implementation of the researched problem in independently performed developments.

Researchers define the stages of writing a course paper differently and distinguish them accordingly from three stages – preparatory, executive, final – to five stages – planning, information, experimental, analytical and the stage of design and presentation of research results. The ability to perform course paper is mostly associated with the ability to set a variety of research goals, the ability to perform mental and practical actions that are subject to the logic of scientific research, the ability to perform cognitive information retrieval and analytical-synthetic processing of results, willingness to obtain various results, their comprehension and use for further knowledge (Moskalenko & Didenko, 2018; Djiwandono, 2019).

The ability to navigate in the information space quickly is one of the conditions for the productivity of scientific work. The complexity of the search system has an incentive to a special branch of study – computer science – which provides an idea of a general system of scientific information and sources of information on the assumption of individual disciplines, provides an ability to choose a rational search scheme and use supporting bibliographic and information materials. Documentary sources of scientific information are allocated into primary and secondary ones.

Primary documents and publications contain new scientific and special information. Secondary documents contain the results of analytical-synthetic and logical processing of primary documents (Mishra, 2016; Riezina, 2003; Hartono et al., 2021). The first group includes monographs, collections of scientific papers,

abstracts of scientific reports, articles in periodical publications as well as dissertations (abstracts) and archival documents. Primary sources of information are evaluated according to certain criteria, among which there are the following: completeness and credibility of data, term of their publication, availability of theoretical generalizations. The second group consists of reference books (encyclopedias, dictionaries), information publications (abstracts, reviews), catalogs and card indexes (alphabetical, systematic), various periodicals and non-periodic bibliographic publications (Kennewell, 2006; Shvachych et al., 2017; Al-Gahtani et al., 2007). The success of research activities largely depends on the students' ability to navigate in modern electronic catalogs, build the appropriate search strategy, be able to find keywords, and perform information retrieval. Information retrieval skills can be defined as a complex set of mental and practical actions which involves:

- Awareness of the information need and its formulation in the information request;
- Determination of the set of information arrays in which the search will be carried out;
- Planning and selection of means of information retrieval activities;
- Analysis of search results.

In September 2019 the Faculty of Ukrainian and Foreign Philology and Study of Arts of Dnipro National University conducted a survey to determine the role of the Internet in the development of theoretical sources and independent research of students in writing course papers. The survey was passed by 67 students of II-IV courses majoring in "Philology" (Martinsons & Westwood 1997; Gumperz & Tannen, 1979). According to the survey, almost all students (98%) use the Internet while writing course papers. During this type of work, 2% of the respondents turn only to the services of a traditional library, only 45% of the respondents turn to Internet, and the majority combines the Internet searching with the library fund (53%). Similar surveys were conducted among teachers by other scholars, in particular P. I. Djwandono studied the experience of foreign university staff and found that the productivity of ICT in the teaching linguistic disciplines depends on the age of the lecturer (Paul et al., 2003; Conrad, 1999; Cheng et al., 2003).

Undoubtedly, the experience of using ICT in foreign countries is much longer and more effective than in Ukraine, which has a positive effect of information competencies development at school age. In particular, as noted by S. Kennewell, in schools in the UK the position of ICT mentor is promoted, it directs students to the successful use of ICT in their educational activities [28]. Using search engines actively, students carry out such activities primarily in international systems. The effectiveness of the search in these systems was recognized by 40% of students, as most do not always find the necessary information in sufficient quantities. If the search did not yield results, the vast majority of respondents try to reformulate the query (76%) or switch to another search engine (15%), and only 8% of respondents change the language of the queries. Bing (18% of respondents) and META (2%) are the most popular search engines after Google (99% of respondents). Unfortunately, after searching the materials for the theoretical basis of the course paper, a significant part of students (78%) turn to ICT only for

the design and preparation for the defense of the course paper (Yang, 2009; Sugyaningsih & Mardiana, 2017; Ritonga et al., 2021). In this case, a text editor Microsoft Word and MS Office PowerPoint is used.

A small number of course paper performers (11%) use cloud storage to store the required scientific information. Among other ICT tools used while writing the course paper, students of philology mention Google Forms, OneDrive, VAK.in.ua and others. Having analyzed the results of the survey and being based on the research of I. Robert [29], a conclusion was made about the possibility of distinguishing three levels of information and communication activities (hereinafter - ICA) of students while writing course papers:

- Adaptive: a weak level of information competence (consists of search information in classical search engines and further visualization of the study);
- Productive: a sufficient level of information competence (related to the use of scientific search engines, cloud storage, sites for the process of scientific sources, electronic library resources, bibliographic and abstract databases);
- Creative: a high level of information competence (consists of the use of special ICT tools, due to the theme of the course paper).

Analyze these levels in more detail at each stage of writing a course paper. Work on the study begins with acquaintance with the state of the selected problem and with the available research papers on the topic of the course paper. Following this, students use search engines on the Internet, which contain a variety of materials from the linguistic area of expertise (Horwitz, 1995; Wu et al., 2013; Ozturk, 2007). To obtain the required data, students often turn to the following international search engines: Google (<https://www.google.com>), Yahoo (<https://www.yahoo.com>) and Bing (<https://www.bing.com>), which have their own databases and search technologies.

Among Ukrainian information retrieval systems, the most famous among students is META (<http://meta-ukraine.com>). According to O. Rezina, the information search service META successfully combines the functions of the search directory and the search engine, so as to provide opportunities to search for information on a particular topic and keywords. The META program is characterized by high accuracy and speed of search, processing of documents in any European language, implementing of work taking into account morphology of Ukrainian, Russian and English languages, correct processing of non-vocabulary words-neologisms, surnames, proper names, special symbols. Moreover, morphology (laws of word formation) significantly increases the convenience and efficiency of the search engine, rids the user from the need to create complex queries [30, p. 193]. However, students with an adaptive level of ICA use these networks in their research, deploying only the principle of convenience. Classic search in these systems is not always effective, its result may be the sites that have a certain advertising interest (Sarker & Gonzalez, 2017; Ginsburgh et al., 2007).

More precisely, the Google system is also focused on Wikipedia, which does not contribute to the acquisition of scientific knowledge for further writing of the

course paper. In this case, student must make effort to find and recognize relevant and scientific information related to his topic of the course paper (Fig. 1).

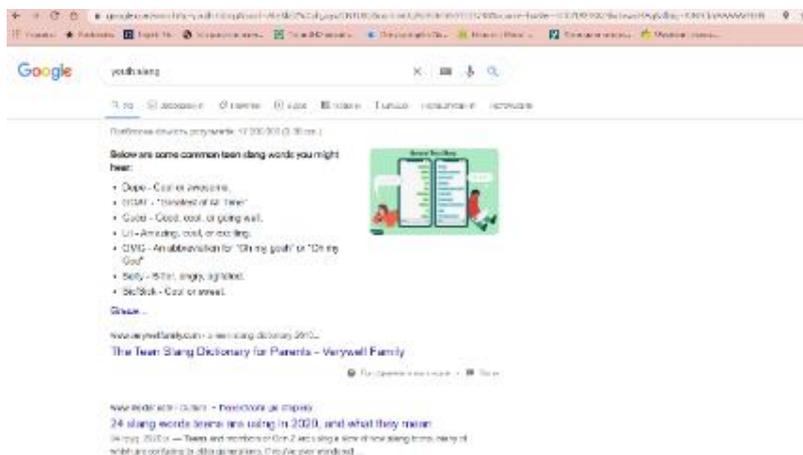


Figure 1. Search results in Google for request “youth slang”.

From what is displayed on Fig. 1, the first search results for “youth slang” request turned out to be far from relevant scientific information. The information found is mostly popular articles and fragmentary lexicographical research works. The effectiveness of this information retrieval is quite questionable, which affects the level of course paper in general.

It is much more effective to work with specialized search engines, library resources, abstract databases. The aforementioned sources are used by a student with a productive level of ICA. It is remarkable that abstract information about the linguistic works of Ukrainian researchers can be found in the catalog of the site of the National Library of Ukraine named after V. I. Vernadsky (<http://www.nbuv.gov.ua>), the scientific library of the National University Kyiv-Mohyla Academy (<http://www.library.ukma.kiev.ua>) which contains links to current linguistic periodicals and monographs.

These collections are characterized by the presence of information about a particular literature, but information retrieval is limited to a number of documents contained in the collection of the institution (see Fig. 2).

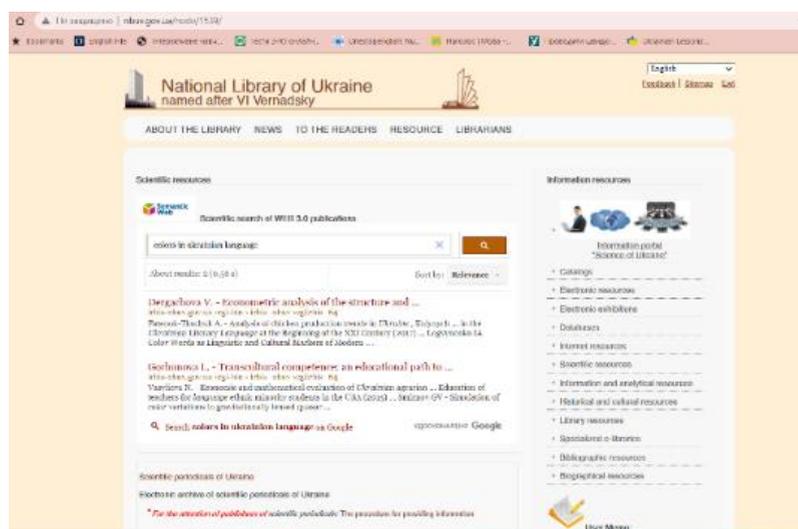


Figure 2. Search results in the catalog of the National Library of Ukraine named after V. I. Vernadsky for the request “coloratives in the Ukrainian language”.

It is also productive to search in specialized search engines, which include articles from scientific publishers, reprint archives, publications on the websites of universities, scientific societies and other scientific organizations. This is in particular the Google vertical search service – Google Scholar (<https://scholar.google.com>) which calculates the index of citations of publications, and the student can easily find works that represent the most important achievements in the appropriate topic (see Fig. 3).

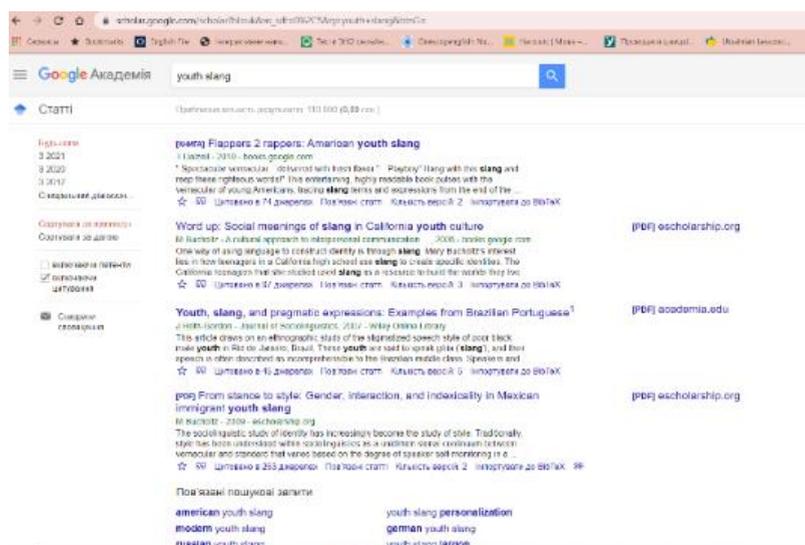


Figure 3. Search results in Google Scholar for “youth slang” request.

In addition to scientific search engines, students with a productive level of ICA use combined (hybrid) search engines or portals while writing a course paper. Among the linguistic portals, the most popular are the Ukrainian Linguistic Portal

(<https://www.ulif.org.ua>) and Mova.info (<https://www.mova.info>), which contain a corpus of basic texts, dictionaries and textbooks in Ukrainian. Philologists, whose implementation of course papers is directly related to lexicographical works, find the help of these portals especially important. Online dictionaries facilitate the writing of linguistic works on the analysis of certain lexical and semantic groups of words, foreign language vocabulary, terminology, etc.

Thus, at the preparatory stage of writing a course paper, students with adaptive and productive levels of ICT use network resources in different ways. Further students with the adaptive level do not use ICT in the course paper. At the same time, the executive stage of the course paper also has the opportunity to use ICT. For example, students during the accumulation and processing of theoretical knowledge on the topic of the course paper successfully use cloud technologies to store and get acquainted with a particular linguistic problem. In fact, cloud storage, according to researchers, is a kind of «online flash drive, which should not be carried and which is never forgotten at home» [31, p. 79]. OneDrive (<https://onedrive.live.com>), Dropbox (<https://www.dropbox.com>), GoogleDrive ([https://www.google.com/intl/ru\\_ALL/drive/](https://www.google.com/intl/ru_ALL/drive/)), etc. services are popular among students.

At the executive stage, ICT tools are also useful for students while working with the source base for course paper. If earlier this type of a base for linguists was mainly in the guise of printed materials (works of art, periodicals, dialectological materials), today a modern student uses the following online libraries: Chtivo (<https://chtyvo.org.ua>), Ukrlib (<https://www.ukrlib.com.ua>), Izbornik (<http://litopys.org.ua>), Ukrainian-language linguistic portals Mova.info (<http://www.mova.info>), Probi.in.ua (<https://probi.in.ua>), where the corpuses of the main Ukrainian texts are located.

Work with the linguistic corpuses of texts which we interpret as a significant in scope, unified, structured, marked, philologically competent corpus of language data in an electronic form, created to solve specific linguistic problems, students build primarily on the use of the results of specific electronic dictionaries – concordances. The advantages of concordance are the following: it is a source of ready-made illustrative material, a base of modern lexicography, a tool for solving linguistic issues (creating lists of words for different purposes, identifying and analyzing keywords, analyzing the frequency of words and phrases and a comparative analysis of lexicons of different authors). Thus, for students, this ICT tool becomes a highly informative form of vocabulary.

Today, a part of the course paper executed by future linguists is based on the results of a poll (conducted mainly by questionnaire). In this case, students actively use ICT to create questionnaires and conduct surveys. The Google Forms platform (<https://www.google.com/forms/about>) is popular, allowing course paper performers to interview a significant number of respondents quickly and anonymously (see Fig. 4). The survey in question on the Google Forms platform also greatly facilitates the processing of results.

Changes in ukrainian spelling

How do you feel about femininities (eg. directress)?

positive  
 neutral  
 negative

How do you feel about changing 'f' to 'f' in modern ukrainian spelling?

positive  
 neutral  
 negative

How do you feel about changing 'au' to 'av' in modern ukrainian spelling?

positive  
 neutral  
 negative

Figure 4. Sample of questions from the questionnaire for students, posted on Google Forms on the topic of the course paper “Language behavior of future philologists”

The selection and systematization of illustrative material play an important role at the executive stage of writing a course paper. They also contribute to the interpretation of research material, the formulation of clear and logical conclusions. The main illustrative material for a linguist is text: written sources, fixations of oral speech. Written sources are most often fiction, scientific, journalistic literature, periodicals, and dictionaries. In this case, students with a creative ICA can use the Miro (<https://miro.com>) platform to classify examples from a variety of literature which facilitates information processing through the creation of mental maps (see Fig. 5).



Figure 5. Sample of proper names classification on the Miro platform on the topic of the course paper “Onomastic vocabulary in modern literature for children”.

These ICT tools are used by philology students with a creative level of ICA, who have the ability to use global information resources and use them properly. The creative level of the students' ICA turns the student into a subject of scientific activity, what increases the level of development of independent cognitive activity and affects the effectiveness of intellectual development of the student. Scientific

search engines have a wide range of opportunities to search for the necessary scientific information in the process of research activities of the student, provide full access to the texts of documents on selected topics.

At the final stage of preparation of the course paper, students of philology should pay special attention to the design of the list of used literature. Today, scientific works in higher education institutions are designed in compliance with the standards of National Standard of Ukraine (NSU) 8302: 2015. And at this stage of the course paper students (with a productive and creative level of ICA) use ICT, in particular the sites VAK.in.ua (<https://vak.in.ua>), 4author.com (<https://www.4author.com>), etc., where online sources can be issued in accordance with the requirements of NSU or APA style.

The result of the course paper is its public defense (discussion, analysis, evaluation of quality and results of practical work) which requires students to use the skills of public speaking and the ability to defend their own position. The most effective form of presenting the results of the course paper is a multimedia presentation, which is a visualization of the text of the students' scientific report. Students work on the presentation mainly in Microsoft PowerPoint or OpenOffice Impress software. The ability to create a meaningful presentation of the work performed also depends on the level of ICA. While process of planning and preparing a presentation, students need to think about its scheme, choose the best version of the slides. PowerPoint offers ready-made templates where it is possible to print texts or tables and diagrams (see Fig. 6).

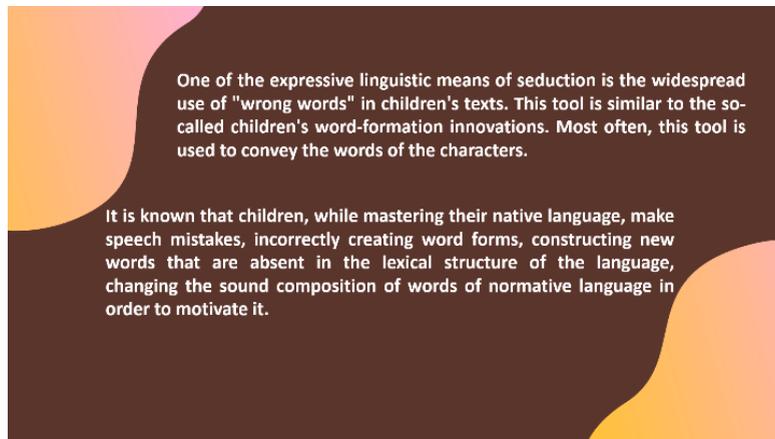


Figure 6. Part of the presentation on the defense on the topic course paper "Linguistic features of modern literature for children".

Thus, the modern information and communication space gives a student the opportunity not only for quality implementation of course paper, but also for the involvement of the creative component, the expression of scientific work by their own individuality.

## Conclusion

Thus, the effective use of ICT in writing a course paper not only facilitates the search for scientific literature and processing of factual material for future philologists, but also affects the education of information culture of student youth. Using ICT, planning them for research activities of the student, it should be understood that the most important task in this case is the adaptation of young people to a life in the information society.

The productivity of the use of ICT depends on the level of ICA of the student, his/her information competence as well as awareness of the presence of certain ICT that are necessary at a certain stage of the course paper. The study proves that students are actively working with linguistic portals, online dictionaries and a source database on the Internet. At the same time, philological youth make little use of other Internet resources (sites for literature organizing, platforms for creating mental maps, cloud storage, etc.). Thus, today the problem of creating a modern national system of linguistic resources – which would contribute to the development of philological science and the dissemination of the latest scientific information is not only in Ukraine but also abroad. The prospects for further scientific research are to be observed in the analysis of the use of ICT in distance learning of linguistic disciplines in higher education institutions of Ukraine.

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