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з дисципліни «Scientific communications in professional activity»
для всіх галузей знань і напрямів підготовки

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Lecture 1

Scientific communications in the knowledge society: current state and problems of development

1. Scientific communication: definitions and features
2. The concept of academic integrity and academic culture
3. Tools and procedures for checking academic works for plagiarism
4. Academic culture at the university: the experience of foreign universities

Literature

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1. Scientific communication: definitions and features

- The concept of communication as a scientific term and a field of research owes its second birth to the XX century. It comes from Latin. *communicatio* - message, transmission, conversation, conversation. Moreover, dictionaries indicate that the study of communication problems dates back to the time of Plato.
- As always in science, different authors interpret the meaning of this concept in completely different ways. Sociologists (P. Sorokin) understand communication as interaction, ie the transfer of social information. Psychologists (A. Leontiev) - the processes of exchange of products of psychological activity, especially communication. Cybernetics (A. Ursul) - the exchange of information between complex dynamic systems and their parts to perceive, accumulate and process information.

- In view of the above, we can state that communication is a process of information transfer between the subjects of the social sphere of society.

- In the development of modern society plays an important role scientific information obtained as a result of scientific knowledge, its receipt, dissemination and use are essential for the development of science. Scientific information is disseminated in time and space through certain channels, means, methods. A special place in this system belongs to scientific communication.

- Scientific communication is the exchange of scientific information (ideas, knowledge, messages) between scientists and specialists, as well as the skill of representing scientific knowledge to a wide audience.

- Scientific communication is a specially organized system of social interactions aimed at finding, accumulating and disseminating scientific knowledge about the surrounding reality, which can inform through various channels, means, forms and institutions of communication.

- The state of scientific communication determines the viability of the scientific community, the effectiveness of professional communication of its members. The structure of scientific communications includes the following components:

- a) direct connections - personal conversations, face-to-face scientific discussions, oral reports (personal networks);

- b) connections mediated by technical means of information reproduction - publications of books, scientific journals, abstract journals (mediated networks);

- c) mixed connections - scientific conferences, scientific and technical exhibitions (interactive networks).

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- By the nature of connections, scientific communications can take the form of formal and informal contacts, be targeted and unaddressed, formal and informal, interpersonal and impersonal, direct and indirect.

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- In the process of SC there are five main elements:

- 1) communicator - the sender of the message (the person who generates the idea or collects, processes scientific information and transmits it).

- 2) communication - a message (fixed or unfixed scientific information, encoded in a certain way with the help of symbols, signs, codes).
- 3) channel (method of transmitting scientific information).
- 4) recipient - the recipient of the message (the person to whom the information is intended and who in some way interprets it, responds to it).
- 5) feedback - the reaction of the recipient to the received scientific message.

- Formal SC - the exchange of scientific information through specially created structures for the generation, processing and dissemination of scientific knowledge. These are publishing houses, editorial offices of newspapers and magazines, research institutions, higher education institutions, radio, television, libraries, information centers, museums, archives, etc. In science, formal communication is often seen as the publication of an article in a journal or scientific monograph and reference. Direct citation of one author to another indicates the creation of a formal channel of communication between them - from the cited author to the one who cites. If two researchers cite the third, then a formal communication is created between the first and third author by citation.

- Informal SC is a communication that is established between the communicant (sender) and the recipient (recipient) through personal contacts, meetings, conversations, telephone conversations, correspondence, etc. A positive aspect of such communication is saving time, ensuring deeper mutual understanding. The effectiveness of informal SCs is determined through self-reports, surveys, observations. Some informal exchanges of scientific information become apparent when co-authored scientists publish the results of their research.

Document SC - communication mediated by a scientific document, based on the exchange of documented information (ideas, messages, knowledge). A scientific document is the publication of the results of theoretical and (or) experimental research, as well as the preparation of scientists for the publication of cultural monuments, historical documents and literary texts. It contains scientific information recorded on a tangible medium for transmission in space and time.

In the SC system, a scientific document acquires the status of a communication. It can be in the form of published abstracts, the text of a scientific report, article, description of the invention, monograph, research report,

dissertation, dissertation abstract, analytical review, abstract, etc. Scientific information can be transmitted in the form of a book, brochure, magazine, diskette, etc.

Advantages of such communications:

- Good preservation of scientific information;
- Possibility of studying, repeated re-reading of information;
- The ability to bring to many recipients;
- The possibility of establishing intellectual property rights.

The disadvantages of documentary NCs are the difficulty of updating, the volume of information and so on.

Non-documentary (oral) SC - the transfer of scientific information in a form not fixed on a tangible medium. These are telephone conversations, public speeches, meetings, conferences, symposiums, direct communication, conversations, etc. A positive aspect of oral communication is the saving of time, the possibility of greater understanding between scientists.

2. The concept of academic integrity and academic culture

Having chosen the European vector of development, our state should focus on the best examples of world culture, in particular academic culture.

Academic culture is a culture of knowledge accumulation, development, organization and transmission from generation to generation through practitioners and transmitters, ie researchers and teachers of research institutions and higher education institutions.

The basic concept of academic culture is academic integrity in the processes of teaching, learning and research.

Researchers note that the problem of violation of academic integrity exists in all countries and has been manifested for a long time, has a steady upward trend. In Ukraine, manifestations of violations of academic integrity are becoming too large.

- Manifestations of academic dishonesty:
 - by students: copying on exams, rewriting other people's essays, ordering theses, using other people's results without reference to the author;
 - by teachers and researchers: inclusion of outsiders in the authors of research, improper scientific review, coercion to cite, etc.

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- Such a manifestation of academic dishonesty as plagiarism deserves a separate analysis. According to the Ministry of Education and Science of Ukraine,

more than 90% of students are involved in plagiarism, a significant number of them are not even reported to be illegal. But the use of plagiarism and what is the norm is one problem.

- Another problem is that very often students do not even understand what plagiarism is and do not understand that they are using some form of plagiarism. For example, again, I will refer to this study that I mentioned. More than 60% of students do not believe that copying someone else's texts with a change of word order in a sentence without reference to the source is plagiarism. That is, if you just take someone's sentence, a paragraph of someone's text, rearrange the words in the sentence a little, most students will be convinced that it is not plagiarism, then it automatically becomes a unique study.

Just as the same proportion of students do not believe that translating from a foreign language and presenting a certain text as a result of their own research, that this is also a dishonest behavior that should be avoided.

In encyclopedias and reference books, plagiarism is defined as the intentional or deliberate presentation or publication of another's work under the name of a person who is not the author of that work, without proper references.

Researchers of the problems of academic plagiarism recommend to distinguish between direct plagiarism and borrowing of information on the basis of which a new research product is created under the conditions of observance of the rules of academic honesty. However, opinions differ on the legitimacy of such borrowings.

A scientist can borrow an idea and apply it in completely new conditions or on new objects. Or use someone else's experimental data to confirm their findings and continue research in new directions.

There are the following types of academic plagiarism:

- literal copying of someone else's work;
- a significant proportion of text from a single source without any changes;
- replacement of keywords and phrases while preserving the main content of the source;
- phrases from various sources in the form of a whole text;
- significant borrowings from the author's previous works (autoplagerism, self-plagiarism);
- combining borrowed materials from several sources without proper citation;
- written excerpts with references to non-existent or inaccurate information.

3. Tools and procedures for checking academic works for plagiarism

Plagiarism testing in one form or another has always existed, but it has not been effective enough. With the advent of specialized plagiarism detection software, this case has become much easier, but automated verification is, to a large extent, helpful for expert decision-making. One of the modern ways to combat academic plagiarism is to detect and diagnose it with the help of computer programs. To date, there are few software tools to help determine the percentage of unique text. Each software has its own features, advantages and disadvantages:

1. AntiPlagiarism.NET <http://antiplagiarism.net/ru/>
2. Advego Plagiatus <http://advego.ru/plagiatus/>
3. Cognitive Text Analyzer <http://www.cognitivetpg.com/>
4. Compare Suite <http://www.comparesuite.ru/>
5. Double Content Finder (DC Finder) <http://progidarom.ru/soft/internet/DCFinder.exe>
6. Etxt Антиплагиат <https://www.etxt.ru/antiplagiat/>
7. Plagiarism-Detector Personal <http://plagiarism-detector.com/>
8. Turnitin http://turnitin.com/en_us/
9. Viper <http://www.scanmyessay.com/>
10. Unplag <https://unplag.com/>
11. Плагиата.НЕТ <http://www.mywebs.ru/plagiatanet.html>

Services for checking texts for uniqueness work mainly on the same algorithm. The document is translated by a text editor into .txt text and checked. Checking and searching for matches is performed on shingles (shingle method - text breakdown).

Shingle - a structural and logical fragment of the text, consisting of a sequence of several words. Searching the Internet is done by several search engines. The result is a visualization of the percentage of original text and a list of sites with a percentage of matching in the appropriate color, depending on the search engines used. When choosing programs, it is necessary to pay attention to their ability to fully support the Ukrainian, Russian and English languages, convenience and accessibility for use.

4. Academic culture at the university: the experience of foreign universities

Academic virtues should include respect for the individual, his or her dignity, integrity in scientific work, and ethical conduct in the performance of his or her duties. An important role in the protection of moral and educational values is played by academic traditions, which structure the activities of participants in the educational process through common beliefs and feelings.

In order to overcome academic dishonesty in foreign universities, special units are created, the powers of which include organizational and methodological

support for the implementation of accepted standards of academic integrity, administration of relevant processes.

Today, the most well-known standards at the level of university associations are those developed by the International Association of Universities, an association of institutions (120 countries) related to higher education (founded at UNESCO, 1950).

In Ukraine, such a manifestation of academic dishonesty as plagiarism is terminologically enshrined in domestic law, in particular in the Laws of Ukraine "On Copyright and Related Rights" and "On Higher Education". However, in the latter, the responsibility for the manifestations of plagiarism is provided only for persons who obtain a scientific degree: in case of detection of plagiarism, the person is deprived of a scientific degree.

The National Aviation University has had "Regulations on the Detection and Prevention of Academic Plagiarism" since 2018. The Regulations describe in detail what exactly can be considered plagiarism. It is stated that the following are subject to scrutiny for academic plagiarism:

- qualification works (diploma, dissertation, etc.), term papers applicants for higher education, individual tasks of educational and research, creative or design nature;
- dissertation works at the stage of submission of materials for approbation and for consideration by a specialized council, editorial board or department;
- monographs, textbooks, manuals and other works that have the author's text and require the recommendations of the Academic Council of the Educational and Scientific Institute (faculty), the Department of Military Training for publication;
- manuscripts of articles, abstracts of reports received by scientific editors journals or organizing committees of scientific, scientific-technical and scientific-methodical activities (conferences, seminars, congresses, congresses);
- final reports on the results of R&D, financed from the state and / or local budgets before submission for approval to the SRW.

The text matching / identity / similarity detection system at the University must meet the following characteristics:

- the possibility of joint work of all scientific-pedagogical and scientific employees of the University in one account;
- availability of easy, convenient and informative interface;
- use of a systematic and integrated approach;
- providing opportunities for interuniversity verification of files stored on servers owned by another University to preserve the confidentiality of access and intellectual property rights;
- ensuring fast and high-quality verification of texts indicating the definition of plagiarism or listening to plagiarism;
- check the maximum number of databases, repositories, search index;

- identification of the most common techniques for hiding the identity of the text (replacement of letters and symbols with other alphabets, substitution of hidden characters, etc.);
- ensuring the confidentiality and safe operation of all users;
- automatic work on definition of citations and references;
- the ability to work with different languages.

The Ministry of Education of Ukraine also draws attention to the problem of preventing and combating plagiarism. Since 2014, the requirement of the Ministry of Education and Science of Ukraine is to publish the texts of dissertations on the websites of institutions where they are defended. On July 22, 2016, the Government supported the proposal of the Ministry of Education and Science of Ukraine to establish a National Repository of Academic Texts. The national repository will include databases of dissertation texts, scientific articles, and later this list will expand with student work.

The Ministry of Education and Science is implementing this project in partnership with Microsoft-Ukraine. It is anticipated that the costs associated with the establishment and commissioning of the National Repository of Academic Texts will be within the total budget allocated by the Ministry of Education and Science for 2016 and beyond.

It is necessary to realize that the main requirement when writing a scientific text is its uniqueness. Text content is checked using software. With such programs, you can check the text for uniqueness. To test scientific papers for uniqueness, you need to use software that will clearly indicate which parts of the text borrowing were used, and from which sources, so that you can really check for plagiarism. To do this, it is important to analyze the main, most used programs and online services that can be used to test scientific papers.

Thus, the international experience in ensuring academic integrity is indicative of the fact that world universities view dishonesty as a threat to their security and believe that bad habits are the cause of discord in academia. Such actions can lead to expulsion of the student, dismissal of the teacher from the university community, and the university to lose its image. Therefore, each university seeks to apply and strengthen the principles of guaranteeing academic decency as effectively as possible. In order to avoid the degradation of higher education and the loss of reputation in the public space, such practices should become a model for systemic activities aimed at eradicating corruption in the university environment, and fostering intolerance of corruption - one of the priorities of higher education.