KAPITEL 1 / *CHAPTER 1* [1]
PLAGIARISM, METHODS OF DETECTION, AND PREVENTION MEASURES

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Statement of the problem. The phenomenon of plagiarism in human history is by no means new; it has a centuries-long history. The theft of literary works was condemned by ancient thinkers such as Juvenal, Horace, Virgil, and others. Today, in the era of new technologies that greatly facilitate the copying of other people's works, the problem of appropriation of authorship has become significantly more acute. Violations of academic integrity are condemned and have serious consequences for authors, but many still engage in plagiarism in their work. At the same time, plagiarism is not always intentional, and sometimes its detection in works only indicates that the author was inattentive while writing and did not study the chosen topic deeply enough.

Analysis of recent studies and publications. Analysis of contemporary scientific literature shows that researchers pay considerable attention to issues of academic integrity; prevention and detection of plagiarism; ethical problems related to self-plagiarism; software for detecting plagiarism, etc. The works of authors such as Awdry, R. [1], Bertram Gallant, T., [2], Brett, J. [8], Butterfield, K. D. [11], Cope, B. [3], Cope, M. [3], D'Agostino, A. [4], Di Virgilio, F. [4], Drynan, B. J. [5], Eaton, S. E. [5], Foltynek, T. [6], Guilherme, J. [7], Hart, S. R. [9], Harper, R. [8], Larochelle, D. [2], Livingstone, C. [1], Masic, I. [10], McCabe, D. L. [11], Morgan, L. R. [9], Newton, P. M. [12], Rybníček, R. [6], Santos, M. [7], Sivasubramaniam [12] provide detailed justification for the need to introduce and formulate the basic principles of scientific integrity; academic writing and citation skills in the context of the dominance of digital sources, with the aim of minimizing unintentional plagiarism; the specifics of developing and implementing policies on the use of generative artificial intelligence, etc. This requires further in-depth research to enhance academic integrity and avoid plagiarism.

Purpose of the article. The goal of the scientific research is to analyze the types

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of plagiarism, methods and tools for its detection and prevention.

Presentation of the main research material.

There are many different definitions of academic plagiarism, determined by regulatory objectives and traditions that exist in different fields of knowledge, professional activities, and countries. In particular, definitions may vary slightly in regulations for student and scientific works, journalism and mathematics, British and German universities, etc. But what all definitions have in common is the attribution of results obtained by other persons (the use of quotations, ideas, and opinions without reference to the original source).

At the same time, when it comes to academic plagiarism, it is mostly a requirement that must be met in order for the work to be accepted for defense and for the teacher to avoid problems in the future in case of verification. When it comes to plagiarism in the works of scientists, it is more serious. After all, in essence, it hinders the development of science and in the future may become the reason why the wrong person wins a grant, goes on an internship, gets the desired position, etc.

Plagiarism is fraud that involves stealing someone else's work and deceiving others about that work. The International Center for Academic Integrity website provides a similar definition of plagiarism: “using someone else's work or ideas and passing them off as your own” [13]. Types and characteristics of academic plagiarism include:

- copying, verbatim reproduction of someone else's text and passing it off as your own;

- containing a significant portion of text from a single source without changes;

- retaining the main content of the source with changes to key words and phrases;

- paraphrasing materials from several sources in such a way that the text appears to be coherent;

- essentially, the author duplicating their own results (“self-plagiarism”), significant portions of previously published texts without references;

- a flawless combination of cited sources and copied paragraphs without references;

- a mix of copied materials from several sources;

- the text contains references to non-existent sources, unreliable information about sources;

- the text has proper citation formatting, but contains almost no original ideas;

- the text has proper citation formatting, but contains almost no original ideas;

- the text contains proper citations, but essentially duplicates the wording and/or structure of the original text.

Depending on the form of plagiarism, there are two main types:

1) obvious/open/unconcealed (complete, direct, evident, immediate);

2) concealed (complex, indirect).

Open plagiarism is divided into:

1) complete (complete appropriation of someone else's work);

2) partial (appropriation of a part of someone else's text that is independent in nature, for example, a section of a book);

3) quotational (appropriation of fragments of someone else's work without any additions or changes of one's own).

Hidden plagiarism is divided into:

1) editorial (editing someone else's text or texts without adding anything of one's own; this is not editing, but rather the creation of a new text based on someone else's, i.e., a mix);

2) plagiarism insertion (larger or smaller fragments of someone else's work are inserted into one's own text without references);

3) adaptation (adaptation, reworking of someone else's text without the right to do so and without reference to the original source, i.e., reworking a book into a film script, creating a comic book based on a film, translations, etc.);

4) co-authorship (an inseparable combination of someone else's and your own fragments in the text, for example, writing a new story based on an existing one);

5) informational (means the appropriation of elements of someone else's text that are not protected by copyright, such as methodology, structure, certain information, etc., and their subsequent authorial processing, i.e., associated with “idea theft”).

Ukrainian scholars consider plagiarism to be a complex socio-ethical and legal phenomenon in the field of intellectual property law, which can be viewed as: a violation of the copyright of the creator of the original text; an abuse of the right to freedom of creativity by the person committing plagiarism; a violation of the rights of consumers of intellectual and creative activity; a violation of public order (the interests of society and the state) – in cases where authorship is given social significance [6, 12].

Accordingly, plagiarism is classified according to five criteria:

1) intent:

- intentional plagiarism – deliberate unlawful use of intellectual property rights;

- unintentional plagiarism – technical, resulting from corrections, insufficient knowledge of the conditions for the use of intellectual property objects, which is characteristic of plagiarism in the works of schoolchildren;

2) object of infringement:

- plagiarism of an idea (since an idea is not protected as an object of copyright, it is not recognized as an offense);

- plagiarism of an object of intellectual property (involves the appropriation of the entire object or its protectable part);

3) categories of intellectual activity results:

- authorial (appropriation of authorship of the result of intellectual, creative activity);

- industrial plagiarism (appropriation of an object of intellectual activity, which primarily leads to a violation of the property rights and interests of the copyright holder);

4) Purpose of appropriation:

- Non-commercial (the main purpose is to achieve a specific result in the implementation of an educational program, obtain scientific results, gain popularity, etc., while obtaining commercial benefits is of secondary importance);

- commercial (the main goal is to make a profit);

5) plagiarist – plagiarism in the works of scientists, students, schoolchildren, writers, journalists.

The following types of plagiarism are most common:

1. Copying another author's information and publishing the work as your own without proper citation;

2. Verbatim copying of someone else's work without proper citation (incorrectly formatted or incorrectly cited source).

3. Paraphrasing – retelling someone else's work in your own words without referring to the original author; the essence of paraphrasing is to replace words and symbols.

4. Compilation – the process of writing a work or scientific paper based on another person's materials without independent research and processing of sources.

5. Joining a group work without author's participation in writing the text.

The following are not considered plagiarism [1]:

- common knowledge and facts;

- idioms;

- ideas or definitions that are widely known and accepted;

- paraphrasing the content in your own words when translating from a dialect or other language, if there is no widely known phrase or accepted official translation;

- reports on current news or events that are in the nature of ordinary press information;

- works of folk art (folklore);

- official documents issued by state authorities (laws, decrees, resolutions, court decisions, state standards, etc.) and their official translations.

The consequences of detecting plagiarism in the work of a student or scholar are as follows [7]:

- accusations of academic misconduct and return of the work for revision (in the case of coursework and other types of student work);

- accusations of plagiarism and initiation of proceedings to revoke the scholar's academic degree;

- reputational damage. Authors who have been exposed for plagiarism become unattractive to colleagues in terms of citations (their citation index will fall) and

collaboration (co-authorship in scientific works, joint research, work on grant projects);

- penalties if the author of the article or thesis (the author of the original source) decides to go to court to protect their copyright.

Preventing plagiarism must be a comprehensive effort. It involves:

1. Clearly defining the role of education and awareness of ethical standards in the scientific community. This can be done at various conferences, symposiums, etc.

2. Using tools and software to detect plagiarism – there are online resources as well as programs that can be installed on computers. There are many options available, and different algorithms are used for verification.

3. Familiarization with recommendations for proper citation and referencing of sources. For many people, it is not so much the scientific work itself that is difficult in terms of preparation, but rather the difficulty of formatting sources in accordance with DSTU.

Originality, uniqueness, and relevance are essential for any work, whether it is a term paper, master's thesis, or conference abstract. It is quite difficult to prepare a high-quality text that no one will have any complaints about. It takes a lot of time and effort. This is especially true when you need to prepare material for publication in journals indexed by the international scientometric databases Scopus and Web of Science. After all, the uniqueness must be at the level of 90-95% [10].

Another controversial issue is the assessment of works consisting of fragments of other authors' works as plagiarism, provided that correct references are given. Such works cannot be considered plagiarism, as they do not contain the key feature – the appropriation of someone else's results. However, in most cases (with the exception of certain types of student work), they do not meet the established requirements or objectives, in particular with regard to scientific novelty, the presence of original results, critical analysis of sources, etc. Sometimes such works contain signs of other violations of academic integrity – deception, falsification, and/or fabrication.

There are different requirements for citing and formatting references for different types of academic work. In particular, some of the requirements that complicate the perception of the text by readers may not apply to scientific and methodological works

– textbooks, teaching aids, methodological recommendations, etc. However, even in this case, the use of direct textual borrowings without proper citation and referencing in the text is considered unacceptable. It is also recommended to provide at least a general list of sources used in such publications. Specific requirements for different types of publications and academic texts should be established at the level of higher education institutions or their departments, editorial boards of scientific publications, and professional communities. At the same time, it is necessary to take into account the practices of leading universities around the world, the type and purpose of publications, and the use of references cited by scientometric databases and other sources of scientific information.

The problem of self-plagiarism is also relevant because some authors of scientific publications repeatedly reproduce the same scientific results. At the same time, they present them as independent results that were previously unknown and unpublished. However, it should be understood that self-plagiarism is not about appropriating someone else's results, but about the use of one's own previously published scientific results in a manner that is incorrect from the point of view of academic ethics. This determines the specifics of identifying cases of self-plagiarism and academic responsibility for such violations.

The main reasons for the need to distinguish self-plagiarism as a type of academic misconduct in Europe and North America are that it:

- undermines public trust in science as a whole, as well as in the scientific results of individuals and institutions;

- leads to unjustified advantages for work that has not actually been done; these advantages may include obtaining additional funding for research that has not actually been carried out, increasing the author's scientometric indicators, etc.;

- may violate the copyright and related rights of other individuals and legal entities, in particular publishers and co-authors.

Aggregating or increasing data can complicate or prevent its correct interpretation, as the data may not be comparable, may have different statistical characteristics, may relate to non-identical objects, may not take into account

dynamics, etc. Disaggregating data without reference to the previous publication, explanation of the reasons for the removal of part of the data, recalculation of statistical characteristics, changes to graphs, etc. may give the reader a distorted view of the reliability and credibility of the data and conclusions. Therefore, aggregation and disaggregation without proper differentiation between old and new data and results are considered a violation of academic integrity and/or evidence of a researcher's lack of the necessary qualifications [4].

Reanalysis of previously published data may be due to the emergence of new data processing technologies, new theories applied to their processing, analysis, explanation, etc. It is considered self-plagiarism primarily if the publication partially contains the results of a previous analysis but there are no references to the relevant publications. This gives the reader a distorted view of the research methodology and, accordingly, of the validity and reliability of the results.

Based on the analysis of the problem of self-plagiarism, as well as materials from European and North American higher education and scientific institutions, in particular [2], the following recommendations for regulatory documents and comments on establishing cases of self-plagiarism can be provided.

The concept of self-plagiarism should not be applied to cases of reproduction of an author's scientific results in publications that are not scientific. In particular, to his publications on social networks, in the media, educational and popular science publications, etc. [8]. However, even in these cases, the absence of references to the original source may be a sign of other types of academic misconduct and/or violation of the copyright of others.

The concept of self-plagiarism should also not be applied in cases of failure to provide references to information about the author's scientific results that have already been published in non-scientific sources, in particular, on social networks, in the media, educational and popular science publications [11]. References to such sources are often considered unacceptable in scientific literature. In particular, such publications often contain preliminary results that require proper justification. At the same time, authors should be encouraged to refer to such sources as much as possible in cases where this

is considered acceptable for the relevant type of publication and field of knowledge (field of science) and/or follows from the legislation on the protection of copyright and related rights.

When identifying self-plagiarism, it is important to note that some publications allow reprinting or duplication if it does not violate the rights of other publishers and a reference to the first publication or information about the simultaneous submission of materials for publication in other publications is provided. In such cases, the published material must contain the relevant data. It is also worth noting that some publications, primarily electronic ones, reprint without the consent of the authors or informing them about the reprint. In this case, it is possible to raise objections regarding the violation of integrity and/or legislation by this publication, but not by the authors.

Self-plagiarism does not include reprints (stereotypical or revised and/or supplemented) of monographs, textbooks, teaching aids, and other works containing the results of scientific, educational, or creative activity, which provide information about the reprint and/or references to the first edition. Self-plagiarism also does not include the partial use of fragments of the author's previously published works in new monographs, textbooks, or teaching aids, if the new work provides the relevant information and the amount of duplication is agreed upon with the publisher and the customers of the publication.

Conclusions.

Overcoming the crisis of academic integrity and, in particular, the problems of plagiarism and self-plagiarism requires, among other measures, the establishment of clear procedures and criteria for identifying these violations by special laws and regulatory documents of higher education institutions and scientific institutions. These should serve as safeguards against the possibility of violators being exempt from liability on the basis of decisions based on legislation that is not relevant to issues of academic integrity. When developing internal documents, it is worth taking into account similar procedures and recommendations from leading European and North American universities.