LIMITATIONS OF ANTI-PLAGIARISM SOFTWARE

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Abstract: *Plagiarism is probably the most problematic aspect of contemporary academic ethics. Online access to scientific materials has simplified the work of researchers in some ways, but has also complicated things by making the plagiarism easier. Nowadays, the copying of ideas, expressions or discoveries of other authors from the internet without proper quotation is only a click away. Anti-plagiarism software was designed to combat these misconducts. Even though the anti-plagiarism software helps eliminating illegal appropriation of ideas, expressions, discoveries etc, it has limitation. The subject of the present paper is to present and analyse these limitations, such as taking scientific materials from old books that are not uploaded on the internet, books and articles published in foreign languages and so on.*

Key words: *plagiarism, anti-plagiarism software, ethics, misconduct*.

1. Introduction

The fulminating evolution of the scientific information exposure to the online environment has siginificantly enriched the research work, due to the easy and fast access to databases. It is easy to "build" using pre-existing data and information, but it is also advisable to pay respect to the research work of the predecessors your own research is based on. Thus, in order to better manage and quantify the work of everybody, it was decided to stick to the moral obligation to recognize the others'work on whom their own research is based, a recognition possible by using quations in written documentation. Although honesty in research cannot and should not be questioned, it has been useful to have on-line tools designed to compare documents and avoid plagiarism.

2. A software to detect plagiarism

„Dunărea de Jos" University of Galaţi is a state higher education institution, a "HIGH TRUST " university as ranked by ARACIS in the years 2008 and 2013 (https://www.ugal.ro/informatii/despre/istoric).

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Based on Decree 105/1974, the university was founded on the pre-existing structure of 1948 (Land Improvement Institute), and in 1991 it received the present - day name by Order of the Minister. "Dunărea de Jos" University of Galaţi currently has 13 faculties and 33 departments with a number of approximately 12,000 students and a permanent academic staff of 739 members.

In the first cycle of Bachelor' s studies, there are 8628 students attending 74 study programs in the 13 faculties of the University. In the second cycle of Master's degree studies, 2904 students are enrolled in 41 study programs in 12 faculties. The university has developed 16 doctoral fields under three doctoral schools of mechanical and industrial engineering, fundamental and engineering sciences, and socio-human sciences in which 349 PhD students are coordinated by 97 doctoral coordinators (http://www.admitere.ugal.ro/site/). In over 70 years of existence, Galaţi higher education has trained approximately 65,000 graduates in the fields of engineering, economics, medicine and humanities.

In "Dunarea de Jos " University of Galati – UDJG, the *Code of Ethics and Professional Deontology* promotes the norms and principles of academic ethics and deontology as part of the universally accepted system of values: justice, equity, equal opportunities, dignity, individual and academic freedom, intellectual property, professional and moral integrity, honesty, fairness, duty, public responsibility, etc. UDJG protects these values and sanctions any limitation of their promotion under the university autonomy, transparency and public liability. To meet these moral values, the Sistemantiplagiat.ro platform has been used since 2014 (https://www.ugal.ro/informatii/organizare/comisia-de-etica-universitara/11-site/5851-procedura-generala-de-utilizare-a-sistemului-antiplagiat).

The use of the Sistemantiplagiat.ro software as well as its way and principles of operation are described by the general use procedure developed in 2014 and revised in 2018. The procedure is applied to the books published in the GUP Publishing House, the Annals works of "Dunarea de Jos" University, papers from all conferences organized under the supervision of the university and other important documents requiring anti-plagiarism control (PhD thesis, reports, courses, dissertation papers, etc.) The procedure is displayed on the web page of the University   Ethics Commission – CEU (https://www.ugal.ro/files/site/comisie_etica/15_10_Procedura_gen_Antiplagiat_CEU_rev_2018.pdf)

The Sistemantiplagiat.ro is an on-line tool for comparing documents in text format. The materials to be verified are submitted exclusively in one of the formats: DOC, DOCX, ODT, RTF, PDF editable, PPT and PPTX, with a maximum size of 20 MB and not password protected. The system indicates the number of „borrows" in the analyzed text and the sources they may be found, even taking into account the appropriately marked quotations, footnotes, bibliography, unprotected copyright fragments.

The system verifies materials with sources to be found in the following databases: documents from the University's own database (archived documents), documents from other universities databases (based on the mutual database exchange declaration), documents from the RefBooks database (contains over 3 million articles and books), documents from the legislative database and documents from Internet sources and it generates similarity coefficients that determine the percentages of „borrows" identified

in the comparison data base. The coefficients of similarity quantify the extent to which the analyzed document contains identical fragments found in other texts. Thus:

Similarity Coefficient 1 - is a value (expressed as a percentage) that specifies the level of „borrows" found in certain sources containing at least 5 words and examines mainly the linguistic independence of the work's author. A high proportion of the Similarity Coefficients 1 may indicate excessive borrowing. The limit accepted in our institution is up to 50% (https://www.ugal.ro/files/site/comisie_etica/15_10_Instructiuni_antipl.pdf).

Similarity Coefficient 2 - is a percentage that determines the level of „borrows" that contain at least 25 words. Exceeding the specified value of the Similarity Coefficient 2 is a very clear signal of unauthorized appropriations in the document. The accepted limit in our institution is up to 5% (https://www.ugal.ro/files/site/comisie_etica/15_10_Instructiuni_antipl.pdf).

BDL Coefficient - determines what percentage of the analyzed document is formed exclusively from 8-word or longer phrases, which are found in legal documents in the Legislative Database.

CIT Coefficient - indicates the percentage of the text in the quotation marks, taking into account only the quotes marked with the correct quotation marks. The quote coefficient is an auxiliary function designed to facilitate the analysis of the report, but the mechanical nature of the analysis must be taken into account as well (http://sistemantiplagiat.ro.)

3. Description of the software

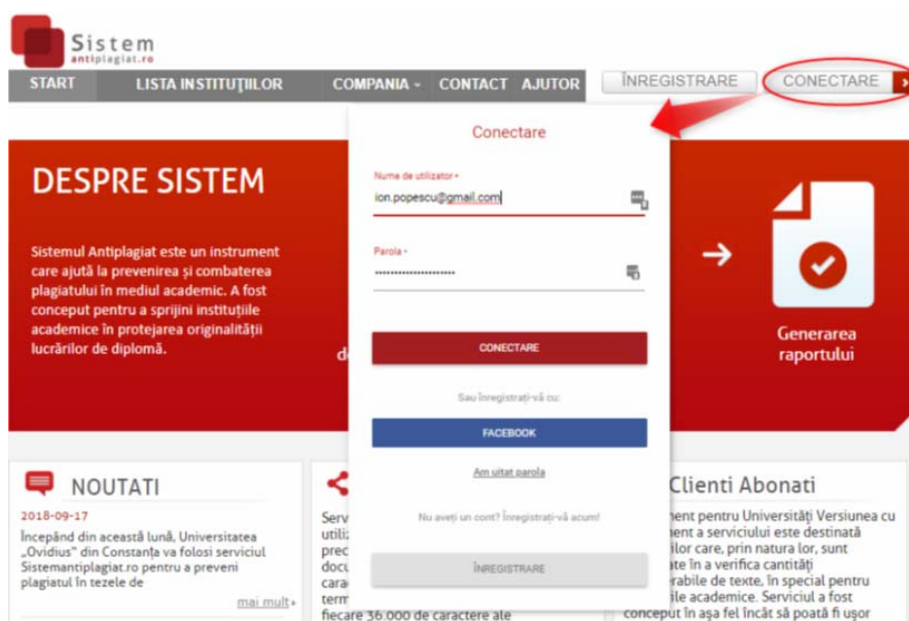Accesss to www.sistemantiplagiat.ro platform is based on a user name and password assigned by the system providers (http://sistemantiplagiat.ro.).

Fig.1. *Main page log in*

The document to be analyzed can be uploaded using the **Load** file, the **Drag & Drop** technique, or the **Copy & Paste** option. After uploading the document, the information requested by the software is uploaded, namely: name and surname of optional author and its entry number; name and surname of the coordinator; the type of document to be analyzed; the organizational unit under which verification is performed.

Fig. 2. *Uploading the document for verification*

To send the document for verification, click the "Check" button and the system will request confirmation of the verification.
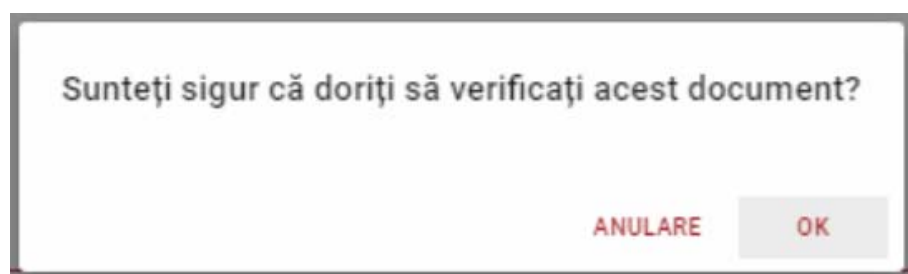

Fig. 3. *Confirmation of the document verification*

By pressing the "OK" button, the document is automatically checked if there are enough tests in the user's account.

The list of the documents entered by the user into the *sistemantiplagiat.ro* is displayed on a *dedicated page*.

Fig. 4. *List of documents introduced into the system*

Advanced Search allows for documents to be scanned for specific parameters: document title, author, coordinator teacher, organizational unit, document status, document type, similiarity coefficients, date of upload, date of similitude report, document size, or alerts.

Fig. 5. *Documents Advanced Search*

In UDJG there is an anti plagiarism system administrator and one user within the CEU. At the same time, in order to use the system to verify the bachelor's and dissertation papers as well, training sessions have been organized for two representatives of each faculty from UDJG. Also, training courses for doctoral and postdoctoral students were

conducted as part of the activities carried out under of the doctoral schools with the purpose of explaining the antiplagiarism procedure.

Dissemination of information on the use and implementation of the anti-plagiarism system has led to stricter compliance with the deontological norms and good conduct by researchers.

4. Limitations of anti-plagiarism software

We note that, according to the Law 206 of 2004 on the good conduct in scientific research, technological development and innovation, in UDJG the following definitions are accepted:

Plagiarism – exposure in a written work or oral communication, including in electronic form, of texts, phrases, ideas, demonstrations, data, hypotheses, theories, results or scientific methods extracted from written works, including in electronic form, of other authors, without mentioning this and without referring to the original sources.

Self- **Plagiarism** - exposure in a written work or oral communication, including in electronic form, of texts, expressions, demonstrations, data, hypotheses, theories, results or scientific methods extracted from written works, including in electronic form, of the same author(s), without mentioning this and without referring to the original sources.

The following limitations have emerged from the use of the anti-plagiarism system since 2014:

1. The system does not exclude quotes from the calculations of other similarity ratios because problems may arise if someone deliberately omits or mistakes quotes. For example, in a philological work, the author has failed to close quotes, resulting in a CIT of over 80%, the software marking the text in purple colour up to the next quotation marks, which resulted in returning the work to the author with the stated purpose of remedying the deficiencies.

2. We should also mention here those works that can pass the anti-plagiarism test, although they can be found to a greater or lesser extent in older paper works, not registered in electronic databases.

3. Another shortcoming of the *Sistemuluiantiplagiat.ro* system is caused by the translation limitations. For example, in the case of a paper written in an international language, translated into Romanian, or in another language of international circulation and taken over by the author, there is little chance of being detected by the anti-plagiarism system .

4. We should also refer to the differences between the humanist and the engineering fields. For example, in the texts of law or philology, many quotations are used, which is not the case for engineering works. A margin of maximum 50% for the similarity coefficient 1 is justified in the case of a humanist work. As we have shown at the beginning, our university has a manifold profile covering a wide

range of fields: mechanical and industrial engineering, law, arts, philosophy, medicine, physical education and sports, naval architecture, science and the environment, science and food engineering, agronomy, philology, economics, etc., and for a better evaluation of the work being analyzed a new correlation should be made between the field to which the work belongs and the percentage attributed to the similarity coefficient 1.

5. Conclusions

The use of a computer system to detect plagiarism and anti plagiarism is recommended as a mandatory precondition in any higher education institution.

With the use of *sistemantiplagiat.ro*, the extent of the liability of the academic staff , researchers, students, PhDs and post-doctoral students has significantly increased, through the awareness of the strict observance of good conduct in scientific research, which has led to avoiding deviations in the writing and publication of scientific papers.

This has once again proved the crucial role of prevention.

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