

MEASURES AGAINST PLAGIARISM AND RELATED PHENOMENA: A PROPOSAL

Dear Sirs,¹

As the publisher of the Serbian Citation Index and Journal Bibliometric Report CEON/CEES undertook an extensive research during 2008 and 2009, with the ultimate aim of relieving these two information resources from illegitimate papers. Given the high visibility and global reach of the SCIndeks articles, we found it necessary, in order to protect integrity of the database and improve its suitability for official use. We assumed that we thereby also help to preserve the reputation of our scientific community within the country and across the world.

Identification of duplicates is performed within corpus of SCIndeks papers. "Internal" duplicates and incidentally some self-plagiarized, as well as plagiarized articles, were identified on the corpus of all articles, regardless of whether they are available as full text in the database.

Detection of plagiarism was performed indiscriminately, but due to technical limitations only on papers published in English. For the same reason, journals in mathematics and mechanics were not subjected to the process. Checking was performed on papers published in 2008 and 2009. Journals belonging to social sciences have been checked for a longer period, from 2000 to 2009, in order to evaluate the effect of changes in the system of evaluation of researchers on the incidence of plagiarism. Cross-checking was carried out through *iThenticate*, a service by *iParadigms*, which was also used by the world's leading journals associated within *CrossRef* system as the best service for the purpose. *iThenticate* identifies verbatim (cut-and-paste) plagiarism, which serves as a ground for analytical assessment of plagiarism in the process of so called verification.

Verification of plagiarism in the work was done in three steps:

(1) The papers were first rated by analysts hired and trained by CEES. Papers were classified into categories with regard to the degree and type of plagiarism. The basic

¹ Centre for Evaluation in Education and Science to the Ministry of Science and Technological Development under Nr.: 49-07/2010, on 06.07.2010. Translated from Serbian. Classified information omitted.

classification comprised three categories: *crude* plagiarism, *mild* plagiarism and *self-plagiarism*. Definitions of categories were derived from generally accepted definitions of plagiarism, as given in academic ethical norms and accompanying international publishing standards and practices. Uniform criteria have been adjusted to some degree to the specific disciplinary requirements.

(2) The same procedure was then independently applied by journal editorial boards. All editors or publishers were sent both postal and email message of the same content, asking them to:

- approach, through a CEES web application (VEP) papers from their journals which are previously isolated by iThenticate as plagiarism-suspected due to the considerable overlapping with other works;
- make sure that overlapping is extensive and illegitimate;
- contact the papers authors and ask them for an explanation for these findings;
- assess papers and classify them into one of the aforementioned categories, or labeling them as legitimate; and
- fill out a short questionnaire on the prevention of plagiarism.

Necessary steps were undertaken to make sure that the letters were actually received by journal editors.

(3) Finally, the results of the editorial boards appraisal were presented to CEES analysts to give them a chance to eventually correct their own initial assessments. Papers labeled as self-plagiarized were then classified into two categories: crude and mild self-plagiarism.

General overview of the results indicate unacceptably large incidence of illegitimate papers in domestic journals. The practice of duplicate publication (Table 1), which has no justification considering general availability of all papers through SCIndeks, has been gradually, but too slowly abandoned in recent years.

Table 1 The frequency of internal duplications and plagiarisms by broad areas of science

area of science	duplicates - same journal	duplicates - different journals	self-plagiarism	plagiarism	total	SCIndeks articles	share of duplicates
social	13	52	16	2	83	26946	0.31
humanities	1	6	2		9	13883	0.06
medicine	8	16	7	2	33	14344	0.23
natural	5	4	1		10	9429	0.11
technology	13	42	24		79	22510	0.35
	40	120	50	4	214	87112	0.25

Of particular concern here is the high degree of plagiarism (Table 2). International authors, who are otherwise not included in this review, heavily contribute to this high rate. Proportion of self-plagiarized papers is also unacceptably large.

Table 2 The frequency of plagiarisms of local authors by broad areas of science

area of science	crude self-plagiarism	mild self-plagiarism	crude plagiarism	mild plagiarism	total	articles checked	share of plagiarisms
social	2	2	30	24	58	562	10.32
humanities					0	12	0.00
medicine	2	10	13	22	47	407	11.55
natural	8	39	12	14	73	578	12.63
technology	11	21	12	18	62	604	10.26
	23	72	67	78	240	2163	11.10

We believe that the scale of plagiarism found here carry a high risk of detection by the growing number of services pursuing plagiarism on the web, which has already practically begun to happen. We also believe that it would much better if Serbian research community faces this problem on its own initiative, then under external pressure. Regardless of this, we believe that this phenomenon requires the action of large-scale, since these type of behaviors pose a serious obstacle to the inclusion of local journals, authors, and institutions in the international system of scientific communication and European research area. We know that some of the world countries, for example China, began their rise in the international science by campaigns to eradicate plagiarism and so gained the sympathy and trust of the international scientific community. In this regard, and in accordance with the good world practices, we suggest:

- (1) that in case of minor violations of publication standards authors publish their corrections, and in case of undisputed plagiarism editorial boards publish their retractions; The Ministry should point to this commitment all editors of journals it supports financially;
- (2) that above changes are made visible in SCIndeks, and duplicates and plagiarisms (including rough self-plagiarisms) are excluded from the corpus for producing Journal Bibliometric Report; that such changes are made by CEES as the publisher, in all cases of absence of action by authors, or journal editorial boards;
- (3) that editorial boards of all journals supported by the Ministry which are available through SCIndeks at the level of full-text be provided financial and technical assistance in preventing plagiarism and related forms of academic dishonesty;
- (4) that an initiative be launched on the mandatory building of contents related to publishing and ethical standards into all programs of higher education, especially at the level of doctoral studies;

(5) that reassessment be made of effectiveness of so-called courts of honor which operate within domestic academic institutions and associations financed by the Ministry and that a possibility be explored of establishing a single regulatory body modeled after offices for protecting integrity of science;

(6) that appropriate disciplinary measures against perpetrators whose works in this investigation was qualified as crude plagiarism be undertaken, while perpetrators of mild forms of plagiarism be publicly warned;

(7) that papers which in this investigation were qualified as crude self-plagiarisms be not recognized within the system of evaluation by the Ministry, while the authors of papers qualified as mild forms of self-plagiarism be publicly warned;

(8) that appropriate measures be undertaken against journals supported by the Ministry that show no willingness to face up to their responsibilities in this matter.

In order to allow you to take measures under 1, 6 and 7 we provide you a full insight into the individual test results, including marked critical sections of plagiarized documents. Results are available within our web application "Checking of papers legitimacy". The application contains Instructions for users. It is available at <http://data.scindeks.nb.rs/xxx> using username xxxx, and password xxxx.

From the comparison of papers qualifications by editorial boards and by the CEES analysts, as well as from iThenticate findings, it is evident that many editors showed the tendency of minimizing committed offences. A part of the editorial boards/publishers escaped cooperation. Therefore, we suggest that in all cases where editorial assessment is missing or qualifications significantly differ trust be given to CEES analysts.

Within the same application editorial boards were offered a questionnaire on measures they plan to undertake to prevent plagiarism, as well as measures that in their view should be taken by the Ministry and by SCIndeks publisher. From the results, also available within the same application, it is evident that cooperative editorial boards have confidence in the action, as well as the need for further support, typically in the form of subscription to a service such as iThenticate.

We are preparing a comprehensive study based on these results. Under the contract with the iParadigms, we undertook the obligation to publish the results in return for free use iThenticate. The results should include the actions taken by the Serbian academic community based on the findings. We ask the Ministry to provide us in the common interest with the full insight into the measures taken under your jurisdiction.

Given that, following our proposal, Ministry earmarked certain funds for detection of plagiarism in papers of 2010 volumes, and the fact that we concluded a contract with the National Library of Serbia (NLS) which inter alia specifies carrying out this activity,

we inform you that iParadigms let us know about the change of terms of iThenticate use, which prevents us from performing this activity within the planned budget. To solve this problem, it is necessary to create an annex to the contract between the Ministry and NLS, as well as between NLS and CEES. The other option is that this activity is excluded from the contract, with corresponding reduction of the contract price.

Management Board
President
Dr. Pero Šipka