

Plagiarism under a Magnifying-Glass

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Abstract

This-paper embodies the-findings from a-small-part, of a-larger-study on-plagiarism, at-the-School of Engineering (SOE). The-study is a-cross-sectional-survey, conducted in-an-institutional-setting. 15 senior academic-members of staff (N=15), from SOE were-invited to-complete a-questionnaire. The-questioner was pre-tested, to-ensure its-validity and reliability. A trial-survey (pre-testing) was conducted, according to ISO 20252:2006 (E). The-Statistical-Package for Social-Sciences (SPSS-17, version 22)-computer software program was-used, to-compute the-Cronbach's alpha coefficient, which demonstrated high-inter-item consistency, and, therefore, reliability (Cronbach's $\alpha=0.803$). Descriptive-statistics was-used, to-analyze, both; qualitative and quantitative-data. The-main-findings of the-study, revealed that, the-majority (60%) of the-respondents alleged, that plagiarism was-never-mentioned or explained, to-them, at-any-level; Overwhelming-majority, (90%) agreed that plagiarism is unfair to-the-original-author and to-the-colleagues; The-vast-majority, (90%) also-claimed that they *never* plagiarized, while 10% confessed that they-did-it one or two-times, in-the-past; majority (70%) also-agreed, that plagiarism is unfair to-oneself; and 60% agreed, it-is-unfair to-the-university. The-analysis of the-plagiarism, from the-faculty-perspective, was-balanced, by-the rigorous-coverage, of the-following-issues: Historical background; Plagiarism' extent; Quantification, for-plagiarism; Consequences of plagiarism: Retraction of publications, with selected global-illustrative-examples; Publishing-process: main-actors and their-roles, in-dealing with-plagiarism; Combating plagiarism, including detection and punishment; and Plagiarism, as just a-tiny-fraction of scientific-misconduct; among others. This-study also-provides few-recommendations, on how to-improve the-current-situation, in-the absence of official-institutional Plagiarism-Policy. The-findings, alongside-with the-theoretical coverage, will, expectantly, make a-contribution (in its-small-way), toward the-body of knowledge, on-the subject.

Keywords: retraction of publication, scientific, academic, faculty, quantification for plagiarism, questionnaire.

1. Introduction

1.1. Plagiarism concept

Plagiarism is a-complex-issue; hence, there is-*no* universally-accepted-definition. To-illustrate this, following are the-selected-examples, on how plagiarism' definition defer, among-universities and institutions of higher-learning: (1) *Stanford* sees plagiarism as the 'use, without giving reasonable and appropriate-credit to or acknowledging the-author or the-source, of another-person's original-work, whether such-work is made-up of: code, formulas, ideas, language, research, strategies, writing or other-form'(Begovic, 2014) (2) *Yale* views plagiarism as the '... use of another's work, words, or ideas, without attribution," which includes '... using a source's language, without quoting, using information from a-source, without attribution, and paraphrasing a-source, in a form, that stays too-close to-the-original' (Editage Insights, 2012); (3) *Princeton* perceives plagiarism as the 'deliberate' use of 'someone else's language, ideas, or other original (not common knowledge) material, without acknowledging its-source' (SIAM Journals, 2011); (4) *Oxford College of Emory University* characterizes plagiarism as the use of 'a writer's ideas or phraseology, without giving due-credit' (Katavić, 2006), and (5) *Wake Forest University* describes plagiarism, as a-human-rights issue, stating that, as a-result of plagiarism 'a person loses not material-possession, but something that characterized him or her, as an-individual. Plagiarism is a-serious-violation of another-person's rights, whether the-material-stolen is great or small; it-is not a-matter of degree or intent.' Regardless of the specifics, attribution (or lack-of-it), however, remains the-general-concern for all-the-above-definitions (Ebert, 2010).

Incidents of plagiarism are viewed along a-wide-range; with-some-incidents regarded, as more-serious, than others (Jones, 2011; Kwong *et al.*, 2010, Blum, 2009; Hudd *et al.*, 2009; Salmons, 2007). Plagiarism-range, according-to-the Committee on Publication Ethics (COPE), is defined as-follows: 'Plagiarism ranges from the unreferenced-use of others' published and unpublished-ideas, including research-grant-applications, to submission under 'new' authorship of a-complete-paper, sometimes in a-different-language. It applies to-print and electronic-versions'. Moreover, it includes abuse of the unique-methods and or results, obtained by-privileged-communications, such-as project-proposals or manuscripts, for-publication in-scientific-journals, master-thesis and doctoral-dissertations, among-others (CPE, 2012).

Plagiarism is one of the-most-common unethical-form, of scientific-fraud (Ferris, 2007; Mojon-Azzi & Mojon, 2004), resulted from both; subjective and objective-factors. *Subjective-causes* are attitudinal and individual: the-circumstances, ambitions, competitive-academic-drive, and simple-ignorance, of the-relevant-rules and conventions. *Objective-causes* include the-pressures, directed at-individuals, by society and family;

society's demand, for skilled and educated-workers and professionals; inconsistencies in defining proper-behavior; lack of rules, to-maintain and enforce it, and deficiencies in the-mechanisms, for detecting and dealing with infractions (UNESCO, 2003).

Donev (2015), on the other-hand, has described plagiarism as a-criminal-act, against the-scientist and against science, itself; he also-emphases that, as-such, it-is punishable. According to Bahadori *et al.* (2012), the-unprecedented-growth of IT, stiff-competition between-countries, rapid-growth of knowledge, unstoppable-multiplication of scientific-journals, lack of good-explication of plagiarism and different-understandings of it, lack of awareness, mismanagement of time, and low-ethical values, among-others, have all-contributed, to the-prevalence of plagiarism, in the-scientific-community. According to-Goodstein (2002), career-pressure and ease of fabrication, are the-primary-motivators, for scientists, to-commit-misconduct. Plagiarism, in-academic and professional-activity, has-become more-common, as the-demand for faculty-productivity has-grown and the-volume of publication has-increased.

Plagiarism is divided into four-categories (Maurer, 2006): (1) 'casual-plagiarism', due to-lack of awareness of plagiarism, or insufficient-understanding of referencing or citation; (2) 'unintentional- plagiarism', where, due-to the-wide-amount of knowledge, in-the-scientific-area, a-person may unknowingly-present ideas, similar to-those, of others; (3) 'intentional-plagiarism', where a-person, deliberately and knowingly, copies, part or all, of somebody else's work, without giving credit, to-them; and (4) 'self-plagiarism', which consists of reusing one's own-published-work, in a-different-form, without acknowledging it.

Self-plagiarism, is rather-common, for-example, in one-study, five out of nine-papers showed significant-usage of sentences, from papers previously-published, by the-same-author, on the-same-subject (Roig, 2005). Furthermore, according to Hayes & Introna (2005), self-plagiarism can-be-defined in three-following-ways: (1) publishing a-paper, which, basically, overlaps another-paper, without due-acknowledgement; (2) breaking a-large-paper into a few-smaller-papers and publishing them, separately, called 'salami-slicing'; and (3) republishing the-same-work, in a-different-journal(s).

1.1.1. Precise-quantification for plagiarism.

The other-important-issue to-be-aware-of, is how-much change, exactly, in-the-original-material, can-make for plagiarism (Park, 2003). To-be-pronounced 'plagiarism', it needs to-be a-rather-serious-deviation, from normally-accepted-behavior, of the-relevant-scientific-community, which is done-deliberately and *must*-be proved, with solid-evidence. However, the-seriousness of the-offense depends on-the-extent, of the-text, plagiarized.

According to World Association of Science and Communication (WASC), plagiarism is specifically-defined as: when six-consecutive-words are copied, seven to eleven-words are overlapping of thirty-letters (Masic, 2012; McCabe & Feghali, 2008). A more-liberal and more-lenient-definition of Sanjeev (2008), is that plagiarism on a-smaller-scale, or 'micro-plagiarism', means copying unchanged-sentences, of less-than 100-words, while 'big-plagiarism' involves copying unchanged-sentences, with more-than 100-words. Replication and publishing of whole-articles, a bigger-part of a-text or a-chapter, without adequate-attribution, is the-most-severe-form of plagiarism, considered as a 'theft' of intellectual-property, also called shameless, aggressive or blatant-plagiarism.

On the-other-hand, Croatian Medical Journal considers plagiarism, if more than 10% text similarity is noted, while other-journals consider 25% or 30%. How-much of plagiarism is acceptable is determined, by-the-editors, of the-journal. Manual-verification is mandatory, the-guidelines for which are available on COPE official-website. Plagiarism, in the-results and discussion-section of the-work, is *not* accepted, whatsoever. However, minor-amount, in-methodology, can-be accepted, with proper-citation and paraphrasing (Sanjeev, 2008). If there is an-instance of substantive-plagiarism (copying more than 25% of the-published source), the-redundant-manuscript should-be withdrawn, from the-publication-process, and actions taken, to-inform respective-institution(s). If plagiarism is surfaced, after the-publication, editors should-retract the-paper and inform the-readership, on-misconduct (Masic, 2012).

Another-perspective was-suggested by Prof. Wisner, Tulane University, as five-criteria, to-evaluate the-seriousness of plagiarism-allegations (Nathan, 2012): (1) What was the-extent of the-plagiarism?; (2) Was the-intent malicious?; (3) Has the-author previously-engaged, in-plagiarism?; (4) What is the-position and training of the-author?; and (5) Was the-source-material original or did the-plagiarism occur from-notes?

Furthermore, the border-line of self-plagiarism is difficult to set-up, because some-journal-editors consider self-plagiarism as a-milder-form, of scientific-dishonesty, and enable up-to 30% of the-text, in-the introduction to-be-taken, from a-previously-published-scientific-paper, by the-same-author (Baždarić, 2009). Most-often, editors retracting an-article, from the-journal, based on-the-final-decision of the competent-body, for scientific-integrity (Masic & Kujundzic, 2013).

1.2. Historical-background

In-ancient-times, the-idea of intellectual-property did *not* exist. Ideas were the-common-property, of the

educated-privileged-elite, who knew and, generally, trusted-each-other. This-system continued through the European-Middle-Ages, where education was in-Latin and in-Greek-language. Some-scholars were monks, who-used much of their-time copying-manuscripts. Most of the-religious-texts were-authorless and were unreservedly-copied and incorporated, into-later-works. Even the-word 'scholarship' meant demonstrating mastery of the-ancient-greats. These-behaviors tend to-change, during the-Renaissance, when originality became more-respected and individual-accomplishment was-recognized, in-many-more-fields that it-had been, previously. This-started, when painters began signing their-works. By the-mid 1600s, accusations, of plagiarism and stealing-ideas, were-common, in every-creative-field, including the-sciences (Wikipedia: Academic-misconduct).

In the 1st Century, the-use of the-Latin word '*plagiarius*' (literally *kidnapper*), to-denote stealing someone else's work, was-used, by the-Roman-poet Martial, who-complained that another-poet had 'kidnapped his-verses'. '*Plagiary*', a-derivative of '*plagiarius*' was introduced into-English, in-1601, by dramatist Ben Jonson, to-describe someone-guilty of literary-theft (Katavić, 2008). The-derived-form *plagiarism* was introduced, into-English, around 1620 (Office of Research Integrity, 2010).

Thomas Mallon (2001), one of the-oldest-authors, on-plagiarism, notes that ancient and medieval Europe had many-authorized-genres, and good-writing, then, meant imitations of a-small-number of respected-authors. Only in 18th century, in-Europe, an-ideal of authorship, particular with the-Romantic movement, has-emerged; while in-the-previous-centuries, authors and artists, were-encouraged to 'copy the masters, as closely as possible' and avoid 'unnecessary-invention' (Editage Insights, 2012).

On the-other-hand, people, are not, generally, associate fraud and misconduct, in-connection with education, and academic and scientific-research. Actually, traditionally, educators and the-education-system, have-been highly-regarded, as major-transmitter of truth, honesty, and similar-positive-values, and consequently, are considered, as somehow 'above-it-all'. Nevertheless, 'from time to time, teachers, professors, and educational-administrators abuse the trust, placed in them, and researchers fabricate or 'massage' their-data, plagiarize and falsify their-reports' (Noah & Eckstein, 2001).

1.3. Plagiarism' extent

Presently, the-problem of plagiarism has grown, to-be-colossal and widespread, in-about all-the-spheres of human-activity, particularly in-science. Plagiarism is fairly-common, among-authors of papers, submitted for publication in-scientific-journals, chapters in-books, master-thesis and doctoral-dissertations (Bilić-Zulle, 2005). According to-the-editors of the-journal '*Nature*', the-incidence of self-plagiarism is ever-growing, possibly due-to the-allocation of funds and because the-progress in the-scientific and academic-career is based, largely, on the-number of published-scientific-papers (Bilić-Zulle, 2007).

The National Science Foundation (NSF) in 2013, declared, that they handle more than 100 cases, of suspected-plagiarism, in a-year. Regrettably, NSF is not an-isolated-body; there are other-academic institutions, as-well-as other-spheres of interest, which is often-revealed, to-the-public, only when scandals break-out. For-example, in-Germany, two-well-known-members of the-Cabinet had to-withdraw, from the office, in the-middle of accusation of alleged-plagiarism, in their-dissertations. Analogous-scandals stunned Canada, the-Philippines, Romania and Russia (Masic, 2014).

The-issue of scientific-misconduct, in the-USA, attained public-awareness in the-1980s, with the emergence of several-episodes of scientific-improprieties (Giles, 2004; Stewart & Feder, 1987). Out of the 3,475 research-institutions, 3% report to-the US Department of Health and Human Services' Office of Research Integrity, indicating some-form of scientific-misconduct (WiredMagazine.com). US, examining funded-research-projects, suggested that the-incidence of misconduct, maybe as-much-as 3 cases, per 100 scientists per-year, with plagiarism accounting for 36% of these-cases of misconduct (Titus *et al.*, 2008). According to the US Office of Research Integrity, on-average, 130-200 allegations of misconduct, per-year, are made, in-medical and bio-medical-research, and about one-third, have-been-confirmed (Decoo, 2002). Other-accusations of plagiarism and academic-misconduct involved well-known-authors, such-as respected-historians Goodwin and Ambrose, and a New York State University; and Classics Professor and a Vice-Chancellor of Monash University, Australia (Anderson, 2002; Baty, 2002).

According to-Schulz (2008), 'A chemist in India has been found guilty of plagiarism and/or falsifying more than 70 research-papers, published in a wide-variety of Western-Scientific-journals, between 2004 and 2007'.

Moreover, Martin (2007) reported a-case, in-which an-author's 1993 article had plagiarized another-article, published in 1980. According to-Martin, 'The allegation was investigated, and it was agreed that it was a serious-case of plagiarism'. While investigating this-author, who-has-published over 100-articles, two-more-articles of his, were-found to-be-plagiarized. Moreover, during the-process of investigation, they found the-plagiarist's article, itself, was plagiarized!

Plagiarism is indeed, a global-phenomenon, with absolutely-no-professional, institutional, regional or

international-boundaries. The-consequences of scientific-misconduct can-be damaging, for-both; perpetrators (Redman & Berz, 2010; Xie, 2008), and any-individuals, who-exposes-it (Research Triangle Institute, 1995). Fanelli & Tregenza (2009) pointed-out that, it-is relatively-easy, to-cheat, although difficult, to know-exactly, how-many-scientists, plagiarize and fabricate-data.

To-tackle the-problem of plagiarism, COPE recommended cooperation with research-institutions and retraction, of untrustworthy-material (COPE, 2016).

1.4. Consequences of plagiarism: Retraction of publications

One of the-possible and direct-consequences of plagiarism, is a-retraction of a-plagiarized-paper. *Retraction* is ‘a mechanism for correcting the literature and alerting readers to publications, that contain such seriously-flawed or erroneous-data, that their-findings and conclusions cannot be relied upon’ (COPE, 2009). Basically, a-work can-be retracted, if it-has-been-considered to-be-based, on serious-errors, plagiarism or fraud; the-two last-ones named scientific-misconduct (Kleinert, 2009). Unreliable information may-result, from-truthful-mistake, or from-research-misconduct. Retraction is also-used, in-case of redundant-publication (i.e. when writer presents the-similar-data, in-several-publications), plagiarism, and failure to-disclose a-major-competing-interest, likely to-influence interpretations or recommendations. The main-purpose of retractions, however, is to-correct the-writing and to-ensure its-integrity, rather than, to-punish-authors (COPE, 2009).

Retractions, in-academic-publishing, have reached an-enormous-apex, increasing tenfold, in the last-three decades, and the-biggest-reason, for this, is plagiarism and duplications (self-plagiarism) (Masic, 2014). The-numbers of retracted-papers vary, from-database-to-database; for-example ScienceDirect database shows over 700 papers have-been-retracted, from scientific-journals, mostly from medical journals, between December, 1985 and November, 2012. Databases of Medline and PubMed, of the-National Library of Medicine, in the-USA, identified more-than 670 published-papers have been declared and designated, as-plagiarized, from 1990 to 2009 (Pupovac, 2008). On the-other-hand, a-survey on 42 largest bibliographic-databases, for major-scholarly-fields and publisher-websites, identified 4,449 scholarly publications retracted from 1928–2011. The-number of articles retracted, per-year, increased, by a-factor of 19.06, from 2001 to 2010, while excluding repeat-offenders and adjusting, for-growth of the published-literature, decreases it, to-a-factor of 11.36. The-USA and EU-27 clearly accounted for most-retractions, prior to 2005. Thereafter, the-numbers, from the-Asian-countries, particularly China, began to-increase-dramatically. Data were based on Web of Science Categories for 1,522 of the 1,796 journals, with at-least one-retraction. For-engineering, in-particular, 20% of articles were retracted, among 2010 Web of Science records, which also represents 12% of the *total*-number of articles, retracted from Journals (Ferric *et al.*, 2012).

The-following-section will-exemplify, the-consequences of plagiarism, by giving few-selected most-illustrative-examples, and, hence, demonstrates just ‘a tip of the-iceberg’ of the-menace.

1.4.1. Selected-illustrative-examples

The-perception of scientists, as objective-seekers of truth, is periodically-jeopardized, by the-discovery of a major-scientific-Fraud (Saunders & Savulescu, 2008). According to Massey & Webster (1997), in the-past, faculty spoke-little of plagiarism; it was just *not* something that the-vast-majority of scholarly-researchers would-consider-doing. But, the-pressure to-publish, among other-factors, has pushed some-academics, to plagiarize words and ideas, from-others. Even some-well-respected-scholars, have-been-found, to-have liberally ‘borrowed’ from others’ work. Moreover, ‘many of the allegations arise in the well-funded and highly competitive-science-disciplines’.

It would-be-logical, to-start this-sub-topic, with so-called ‘farther’ of scientific-misconduct, Gregor Mendel; his-published-work ignited, more-than-a-century of controversy, about the-validity of his-data; interested-readers can-refer, for more-details to Fairbanks & Rytting (2001). Next-section will-present some examples, country-wise:

Singapore: A-professor of immunology, Menendez, Alirio was-found-guilty, of misconduct, on an ‘unprecedented’-scale, by a-committee, at-the National University of Singapore (NUS), by having fabricated, falsified or plagiarized, at-least 21-research-papers, published in-International-academic-journals. Menendez originally worked at NUS, but moved, to-the UK, in-2007, where he first worked at the-University of Glasgow, and next, at-the-University of Liverpool (Yung & Sharma, 2013).

Israel: Dr. Spivak, Alexander a-well-published-author and a tenured-senior-lecturer, at the Holon Institute of Technology (HIT), plagiarized a-paper, written, in-2001, by his-former-postdoctoral-adviser and two-other-researchers, from Tel-Aviv-University (Nadler *et al.*, 2014). Two-chapters of their-original-paper were copied-and-pasted and published, as two-separate-articles, in the-International Journal of Pure and Applied Mathematics (*IJPAM*), seven-years-later. After the-plagiarism was-discovered, in-2014, both-papers: Spivak (2008a) and Spivak (2008b) were retracted, by the *IJPAM* Managing-Editor. The HIT administration’s handling of the-plagiarism-affair, received harsh-criticism, in-Israel (Heruti-Sover, 2014), and abroad (Ferguson, *nd.*), after the-plagiarist was given a-sabbatical-leave, as a-form of ‘punishment’. In-May 2015, yet-another-paper, by

Spivak (2014), was retracted (Katsnelson, *nd.*), from the NumAn-2014 Conference Proceedings.

USA: Ohio-University had a-plagiarism-crisis, in-the-2000s, when severe-plagiarism, in Masters Theses, was-discovered. This resulted in the-firing of two-tenured-professors, Dr. Gunasekara and Dr. Mehta, of the-Mechanical-Engineering-Department, and also-resulted, in multiple-institutional-changes (Markta, 2011; Tomsho, 2006).

More-recently, BellLabs has exposed the-work, of one of their-nano-scientists, Jan Hendrik Schön, as largely-fabricated (see Kennedy, 2002). Schön was widely-regarded as-brilliant; publishing, on-average, one-paper every-8-days, for more-than two-years, 15 of those, in *Science* and *Nature*. Evidently, many-reviewers liked his-work. While he-had some-supporters, there-was also a-lot of gossip, about the validity of his-findings. In-2001, his-co-workers, finally-investigated, and found-out that 16 of 25 papers, contained fraudulent-data, and another-six, were-suspicious. BellLabs fired Schön, immediately, the-U.S.A. revoked his-work-permit, and the-University of Konstanz invalidated the-PhD, that they-awarded-him, in 1997 (Anonymous, 2004).

Romania: (1) Marcu, Dănuț, a-Romanian-mathematician and a-computer-scientist, was banned, from several-journals, due to-plagiarism. He had submitted a-manuscript, which was more-or-less 'word for word' the-same, as a-paper, written by-another-author; (2) Ioan Mang, another-computer-scientist, at the University of Oradea, plagiarized a-paper, by-cryptographer Eli Biham, Dean of the-Computer-Science Department of Technion, Haifa, Israel. He-was accused, of extensive-plagiarism, in at-least-eight of his-academic-papers (Abbott, 2012; Pappas, 2012).

Saudi Arabia: Ali Attia, Hazem, an-Egyptian-professor, in-the-Department of Mathematics, of Al-Qasseem University, had a 2007 paper, retracted, from-the *Mathematical methods in the applied sciences journal*, for being a-near-identical-copy, of an-earlier-paper, published in-the *International Journal of Thermal Science* (Ali-Attia, 2007).

Spain: (1) Two-papers, by Juan Carlos Mejuto and Gonzalo Astray (chemical-physics), in *Journal of Chemical and Engineering Data*, were withdrawn, by the-editor (Astray, 2010), because of plagiarism; (2) The-same happened, with José Román-Gómez, University of Córdoba (Spain), for appropriation of gel-images, in-claimed-work, on signaling and DNA-methylation, in-leukemia, in Roman-Gomez (2004).

China and India, collectively, accounted for more-cases of plagiarism, than the-U.S.A.(Ferric *et al.*, 2012). Thirty-eight research-groups, with-greater, or equal to-five-retractions, accounted for 43.9% (n = 390) of retractions, for fraud or suspected-fraud (Ferric *et al.*, 2012).

From the-above-examples, it-is evident, and supported by Parmley (2000), that: 'It appears that plagiarism is far-more-common, than many of us suspect. We probably catch only the tip of the iceberg'. Overall, many-cases of falsified-research are due-to: conflict of interest, self-interest, and bias. Researchers are motivated, by the-prestige, which comes from being-first, with a-scientific-discovery, or the-financial rewards, of marketing a new-drug. For-example, many-reports of fraud, in-scientific-research (particularly medical and bio-medical) are towards satisfying the-interests, of their-sponsors (UNESCO, 2003).

1.5. Research purpose

According to *Comunicar Journal* (2016), the-following-practices, such-as: misleading, misrepresenting, defrauding, lying, betrayal, concealing, and confusing, among-others, are incompatible-with the transmission of scientific-knowledge, and academic-activities. The-reality, however, is-very-different: there is abundant-evidence showing, that dishonest and fraudulent-activities are still-present, in both-processes. The-issue of academic-integrity, affects all-areas of scientific-knowledge, and all-levels of education systems: their-study, description, comprehension, and analysis will-enable, to-understand-more and, hence, making an-informed-proposals, for-solving the-problem-of dishonesty, in-the-scientific and academic- communication.

Honig & Bedi (2012), pointed-out, that there-are increased-incidences of plagiarism, by-scholars, are-due-to ever-increasing-pressure, for them to-publish, so-as to-climb the-academic-ladder; academic promotion relies, largely, on-the-number of publications and citations, of scientific-papers. Moreover, in addition to-easy-access, to-the-massive-amount, of downloadable-documents, thousands of new-publishers and open-access, online or e-Journals, have-emerged, in last-few-years, as a-money-spinning big-business, and an-easier-way, for desperate-authors, to-publish.

A-considerable-number of empirical-studies, on-plagiarism and dishonesty, among-academicians and researchers, was reported (see Honig & Bedi, 2012; Lacetera & Zirulia, 2011; Clarke, 2006; Enders & Hoover, 2006; Gill, 2006; Collberg & Kobourov, 2005). However, according to-UNESCO (2003), research-coverage on-academic-dishonesty, is limited and uneven, especially, in-developing-countries, like Kenya.

Cases of plagiarism have-risen, in-the-last-years, due to-improvement in-communication- infrastructure, and internet-access, and as Auer & Krupar (2001), rightfully-refer to a-new-revolution in plagiarism, to as 'mouse-click'-plagiarism. Moreover, in-the-local-context, it-occasioned-by, the-arrival of the-first-fiber-optic, in-Kenya, in-the-year 2009. According to-Muchuku (2011), academic-plagiarism, in Kenyan-Universities had increased, mainly-due-to: (1) Ignorance, negligence and lack of scholarly-writing-skills; (2) Lack and

inadequacy of Policy, on-plagiarism and academic-honesty; (3) The-spread of computers and the-Internet; (4) Reluctance, to-punish plagiarism; (5) Laziness, and lack of proficiency, in-English; (6) Social-benefits, that come-with-plagiarism; (7) Limited-time or poor-time-management; (8) Temptation and opportunity; and (9) Lack of awareness on the-consequences of plagiarism.

A-recent-study by Starovoytova & Namango (2016a): “Viewpoint of Undergraduate Engineering Students on Plagiarism” identified, overall and widespread-deficiency, in students’ understanding of plagiarism; also more-than-half, of the-students, in-the-subject-sample, were *not* adequately-informed about plagiarism, in-academic-writing; 76% of the-respondents agreed, that those who say, they-have-never plagiarized, are dishonest; and also that everyone-else, around are plagiarizing (e.g., students, researchers, and academic-staff); 48% of the-respondents agreed, that they keep-on-plagiarizing, because they have *not* been-caught-yet, while 33% stated, that they are tempted-to-plagiarize because, even if caught, the punishment (if any) will-be-light (the-reward outweighs the-risk).

Consequently, to-get a-better-picture, at-the-SOE, research on-student-perceptions was complemented, by research on-faculty-perceptions, in the-subsequent-study, by Starovoytova & Namango (2016b): “Awareness of Engineering-Faculty on Plagiarism”, which revealed a-worrying-lack of understanding, among-engineering-faculty, on-basic-elements of scientific-writing, including plagiarism. The-study-also exposed complete-lack of legal-framework, to-deal with-plagiarism, its-prevention, and punishment, at-the-institutional-level.

The-above-two-studies, have established apparent, widespread-deficiency, in-both; students’ and faculty’ understanding of plagiarism. This-study, therefore, focused on-providing much-closer and deeper-look at-plagiarism; as-such, the-following-issues (*not* covered, in the-previous-two-papers) will be highlighted, such-as: Precise-quantification, for plagiarism; Consequences of plagiarism: Retraction of publications; Publishing-process: main-actors and their-roles, in-dealing with-plagiarism; and Plagiarism as a mere-fraction of academic and scientific-misconduct, among-others. This-coverage, will-be balanced, by the-analysis of perceptions, on-plagiarism, from the-faculty-perspective.

2. Materials and Methods.

2.1. Model and steps applied

This-study used a-document-analysis and a-questioner, as its-main-research-instruments.

Flint *et al.* (2006), identified four-models, that faculty conceptualized, when discussing plagiarism. *Model A*- positioned cheating and plagiarism, as being identical; *Model B*- identified cheating, as being completely-different, from plagiarism; *Model C*- incorporated some-overlap, but with differences, in-the thought-process, between-the-two. *Model D*- treated plagiarism, as a-subset, of the-larger-category, of cheating. This-study followed Model D, consequently, most of the-literature reviewed, either deals with plagiarism, individually, or it-includes plagiarism, as a-category, of cheating.

The-research implemented an-explanatory-approach, of descriptive-survey research-design. The study followed 3 sequential-steps, which-shown, in-self-explanatory Figure 1, according to Starovoytova & Namango (2016 c).

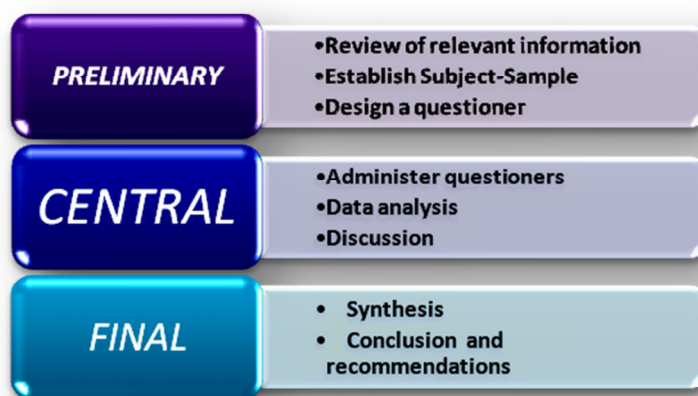


Figure 2: Sequential-parts of the study (Starovoytova & Namango, 2016 c).

2.2 Sample-size and rationale for its selection

15 senior-academic-members of staff (N=15), from the-SOE, Moi University, were invited, to-complete a questionnaire (developed for the-purpose of this-study). The-choice of senior-academic-staff was-based on the-assumption, that all of them, should-have-been publishing, at-their-area, of expertise, and therefore, are

considered, to-be knowledgeable-enough, on the-subject-matter--plagiarism. The-other-criterion included seeking-out both; faculty, who had-gone-through their-graduate-studies, in-Kenya, and these, who-had studied, elsewhere. This was important, to-accommodate wide-spectrum of participants. The-categories were analyzed, within the-single-unit of a-case-study, as all of the-participants are-faculty, at a-single-school, of a single-university, and therefore, the-common-culture provided a-solid-basis, for-discussion and comparison.

On-the-other-hand, Kezar & Lester (2009) argue, that faculty exists, within a-multiplicity of sub-cultures. They live both; in-their-academic-disciplines, and within-institutional-cultures, and values between these-subcultures, can vary. To this-end, the-sample was-drawn from *all* the 5-departments, of the SOE; moreover, no-preference, to-any of the 42 Kenyan-tribes was-given, to-obtain wide-ranging sub-cultural-views.

Furthermore, interested-readers, could-refer to Starovoytova *et al.* (2015), to-find informative synopsis on-Kenya, and its-educational-system. In-addition, information of the-university and the-school, where the-study was conducted, can-be accessed *via* Starovoytova & Cherotich (2016).

2.3. Questionnaire and its administration

A-projective-technique was-used, in this-study, by asking questionnaire-respondents questions, about plagiarism, at-the-SOE. The-subject-sensitivity, relative-position of questions, the-minimization of excess-length, the-visual-impact and ease of comprehension and completion, were all-considered, when designing the-questionnaire, according to-Starovoytova & Namango (2016 c).

The-questioner was pre-tested, to-ensure its-validity and reliability. A-trial-survey (pre-testing), was conducted, according to ISO 20252:2006 (E) Market, Opinion and Social-Research Standard, by administering an-initial-version of the-questionnaire, to one-faculty-member, selected at-random, from the outside of the-subject-sample. Subsequent-discussions, with this-member, resulted in the-fine-tuning of wording and 'polishing' of the-final-version of the-questionnaire, used for the-survey.

The-questionnaires were administered by 'drop & pick'-method. Consenting-members were-given an-appropriate-amount of time, to-complete the-questionnaire, and were informed, on the-confidentiality, of the-process.

The-answers, to-the-open-ended-questions, provided by-the-faculty, were analyzed, by using a content-analysis-technique, for-qualitative-data: the-data were unitized, coded, and grouped, into-themes, according to-Denzin & Lincoln (2000) and Lincoln & Guba (1985). To-ensure-credibility, a-principle of qualitative-inquiry, for ascertaining, that the-analysis and findings, are legitimate, was-used, according to Lincoln & Guba (1985).

Cronbach's alpha was-chosen, as the-most-common-method, of estimating reliability, of an-instrument (Hardy & Bryman, 2009). The-Statistical-Package for Social-Sciences (SPSS-17, version 22)-computer software-program, was used, to-compute the-Cronbach's alpha coefficient. Descriptive-statistics was used to-analyze both; qualitative and quantitative-data.

3. Results, Analysis of the-results, and Discussion.

3.1. Results

3.1.1. Validation of the-instrument

Upon validation-process, it was established, that the-instrument had sufficient-information; the-length of the-entire-instrument was-found suitable, and the-content was logically-organized. Overall, the-instrument was satisfactory, with very-minor-editing.

The-final-version of the-self-report-questionnaire consisted of 2 main-parts: demographics and a research-inquiry, consisting of 9 questions.

Questionnaire-data were coded, entered into SPSS and checked, for-errors. Data were analyzed, list-wise, in-SPSS, so-that missing-values were disregarded. Cronbach's-alpha-test, of internal-consistency, was performed, for perceptions and self-reports on-plagiarism, and demonstrated relatively-high inter-item-consistency (Cronbach's $\alpha=0.803$).

3.1.2. Questioner's responses

Out of the-total-number of questioners, administered (N=15), 10 were collected-back within a specified-time-period, giving a response-rate (RR) of 67%.

3.1.2.1. Results part 1: Demographic-Characteristics.

The-population, of this-study, includes a-purposive-sampling of 15-faculty, from-various-academic disciplines. The-sample-demographics were the-same, as in the-previous-study, by Starovoytova & Namango (2016b), in-particular: 95% of the-respondents were male, while 5% were female; confirming that SOE, as any-other-engineering-school is male-dominated. Out of the 5 Engineering-departments, of the-SOE, responses were received, from only 4 departments: (1) MIT-Manufacturing, Industrial &Textile Engineering contributed 30%, of the-respondents; (2) ECE-Electrical &Communication Engineering, 30%; and 20% for-each; of MPE (Mechanical & Production Engineering) and CPE (Chemical & Process Engineering) departments. The highest-share (40%) of the-participants was Associate-Professors; Senior-lecturers and Lecturers contributed-equally, at

30%, each; however, *no*-response was received, from full-Professors. The-vast-majority, of the-faculty, (40%) have-been-teaching, at-university-level, for 15 to 20 years; followed by 30% of these, taught for 5 to 10years; equal-share (10%) were teaching from 3 to 5 years, and from 10 to 15 years; and the smallest-representation (10%) taught for-over 20 years.

3.1.2.2. Results part 2: Research-questions.

Here, the-questions are presented, the same-way, they-appear, in-the-questioner.

Q1. *Where did you study for your Masters and PhD?*

The vast-majority (70%) indicated that they studied ‘*Only outside Kenya*’, while the-remaining 30% said that they studied, in-Kenya and also outside.

Q2. *How many-years (in total) you have spent for your graduate-education?*

The-maximum was 12, the-minimum 5, while the-mean was 8.3 years.

Q3. *Before you came to the University, was plagiarism ever mentioned or explained to you at any-level?*

Majority, (60%) of the-respondents said, that plagiarism was *never* mentioned, or explained, to-them, at any-level; while the-remaining (40%) confirmed that it was.

Q4. *How often did any of your teachers/supervisors in the past academic-experiences (while a student at Masters or PhD-level) ever tell you that you have plagiarized in your own-written-work?*

The vast-majority, (90%) claimed that they *never* plagiarized, while 10% confessed that they did it 1 or 2 times, in the-past.

Q5. *In your-own-opinion, to what extent do you feel, you yourself copied the words or ideas of other writers, without indicating the source in your writing-assignments/reports/thesis?*

Similarity to Question 4, the vast-majority, (90%) claimed that they never did it, while 10% confessed that they did it a-little-bit, in-the-past.

The-following-section, of the-questioner, asked the-faculty, to-provide their-opinion, by indicating ‘Agree’, ‘Disagree’ or ‘No opinion’ to the-following-questions:

Q6. *When one plagiarizes, he/she is unfair to himself/herself because he/she is not being himself/herself. Rather, he/she is pretending to be better than he/she is.*

Majority (70%) agreed with the-statement, while 30% disagreed.

Q7. *When one plagiarizes, he/she is unfair to the university because it runs counter to the university-educational goals which can never be achieved if one just copy information.*

Here, majority, (60%) disagreed with the-statement, while remaining 40% agreed.

Q8. *When one plagiarizes, he/she is unfair to the writer of the original-passage, because he/she is taking the credit that the writer deserves for the words and ideas.*

Overwhelming-majority (90%) agreed, while 10% disagreed.

Q9. *When one plagiarizes, he/she is unfair to colleagues as everybody is expressing themselves in his/her own language/style, whereas by plagiarizing sometimes one may get a better-manuscript.*

The-answer, to this-question, was identical, to the-answers, to-Question 8.

3.2. Analysis of the responses.

The-study established that, faculty did their-post-graduate-studies for about 8.3 years, on-average. Vast-majority, (70%) of the-SOE’ faculty (under-consideration) studied *only* abroad, while remaining-part studied in-both; Kenya, and outside Kenya. This-statistics show that Kenyan Graduate Education-sector, is yet, to-attain a-satisfactory-compatible-level with such-countries, as UK, USA, Germany, Israel, etc., where many of the-faculty have-studied, as for numerous-areas of specialization, post-graduate programs, are yet to-be-established, in-Kenya. In-addition, it can-be-concluded, that Kenya spends substantial-funds, for academic-training, according to-governing-policy, faculty, on-study-leave, receives 80% of their-salary, regardless of the-number of years, a-study-takes.

Vis-à-vis plagiarism: Majority, (60%) of the-respondents said, that plagiarism was *never* mentioned, or explained to-them, at *any*-level; Overwhelming-majority (90%) agreed that plagiarism is unfair, to the-original-author, and to the-colleagues; The vast-majority, (90%) also-claimed that they *never* plagiarized, while 10% confessed, that they did-it one or 2 times, in-the-past; and majority, (70%) agreed that plagiarism is-unfair to-oneself; while 60% agreed, it-is-unfair to the-university.

The-country spent substantial-amount of money for post-graduate-training, for every-member, of the faculty, therefore, the-absolute-minimum, that the-faculty can-do, is to-produce ethical-publications, trying their-very-best, to-avoid retraction, and its-consequences, which-can-lead to-damage or loss, of the reputation, for a-plagiarist, or even, worse, removal from the-post, meaning that all-the-money and efforts, spend by the-country, went in-vain.

To-this-end, the-following-section, on-how to-combat plagiarism, would be valuable.

3.3. Discussion

3.3.1. Combating plagiarism

Plagiarism, as any-other-type of cheating, ought to-be-controlled, and, preferably, not by a-single-approach, but via 3D-approach, incorporating: Prevention, Detection and Punishment. These, will-be the-focus, of the-subsequent-sections.

3.3.1.1. Prevention

For-potential-authors, there-are numerous-means, to-avoid, and therefore, prevent plagiarism, from happening, such-as: (1) Paraphrasing; (2) Quoting, if more-than six-consecutive-words are copied; (3) Indenting, if more-than several-consecutive-sentences are copied; (4) Citing own-previously published-material; and (5) Properly-referencing.

Plagiarism is, generally, a-rather-debatable-matter, and a-number of organizations provided guidance, to-authors and researchers; guidance is also-available, for journal-editors, dealing-with-cases, of possible-misconduct. Institutions also-publish their-own-guidelines and advice, to-researchers. For-example: the-University of Alaska Fairbanks, the-Office of Research and Integrity-Research-Ethics documentation includes sections on publication, peer-review, redundant-publication and plagiarism (<http://www.uaf.edu/ori/responsible-conduct/peer-review/>).

Rules and policies, however, are no-more-than, guiding-documents, and it-is, largely, up-to an-individual, either to-follow them, or *not*. On the-other-hand, the-occurrence of misconduct, in-itself, is apparently, not the *main*-problem; the-lack of prompt-reaction, to-it, is. In-the-expression of Dunne *et al.* (2008), 'neutrality is political too', he pointed-out, that inaction, is a-link, between silence and a-complete- lack of response.

On the-other-hand, some-academics believe, that colleagues should-always-report, if they happen to suspect or came-across a-scientific-misconduct (Koocher & Speigel, 2010). The-issue, however, complicated, as many-academics are afraid of vengeance, and therefore, generally, avoid reporting.

Dr. Steinschneider, for-instance, published a-pediatrics-paper, in 1972, claiming an-association between infant-sleep-apnea (ISA), which Dr. Steinschneider said he-had-observed and recorded, in his-laboratory, and the-sudden-infant-death-syndrome (SIDS). In-1994, when Waneta Hoyt, the-mother of the patients, in the-paper, was arrested, indicted and convicted on 5 counts of second-degree-murder, for the- smothering-deaths, of her-five-children (Talan & Firstman, 1997), the-truth, on-scientific-misconduct came-out, and, as a-result, tens of millions of research-dollars were-lost, reputation of the-scientist was damaged, and academic and scientific-community was-shocked, with disbelief.

Personnel, exposing such and similar-cases, usually called 'whistleblowers', can find themselves, as victims of retaliation, by a-number of different-means (Lock, 1995). Dealing with academic-misconduct, in a world, grossly-manifested by widespread-misconduct, in-absolutely-all-sectors of life, for-some, perceived as 'complete-waste of time and energy', bringing associations with the King Canute, in his-efforts 'trying to stop the tide'. However, this-view is rather-skeptical.

To-assist researches, faced with a-dilemma 'report or not report', a 'User-friendly Guide', alongside with the-establishment of a-confidential-organizational-structure, in their-institution, may help people, who are undecided about what-to-do, or afraid of bad-consequences, for their-speaking-up (Rowe, 2004). In addition, several-writers, also-provide summaries of practical, but principled-recommendations, for the 'whistle-blower', for protecting the-accused, and for-institutional-action (Decoo, 2000; Cizek 1999; Whitley, 1998). A-timely and significant-model, for-such an-activity, is the-work of the-non-governmental-agency, Transparency International, which suggests possible-ways, of studying and exposing-academic-scams, on a world-wide-scale.

By bringing-together, site-by-site, two-famous-quotes, one, is-by Martin Luther King: 'Our-lives begin to end, the day we become silent, about things that matter' and second-one, by Albert Einstein: 'Many-people say, that it is the intellect, which makes a great-scientist. They are wrong: it is character!' the-authors, would-like to-encourage faculty *not* to-disregard, cover-up, or deny the-menace, but boldly take a-stand of 'zero-tolerance', when faced, with suspicion of or the-plagiarism-act, itself.

3.3.2. Detection

With the-global-expansion of the-internet, numerous-tools are, now, available and easily-accessible, to-detect plagiarism. Maxymuck (2006), for-example, registers websites of eight-universities, guiding faculty, on how-to-detect plagiarism; and websites of four-universities, helping students and faculty, to-learn, how to avoid plagiarism. He-also lists the-websites, of eleven-universities, which-provide online-tutorials, to-test one's knowledge, of plagiarism.

There-are 3-main-approaches, in-detection of plagiarism: (1) The most-common-approach is by comparing the-document, against a-number of other-documents, on a 'word by word'-basis; (2) The-second-approach is by-taking a-characteristic-paragraph and just doing a-search, with a good-search-engine, like Google; and (3) The-third-approach is by-style-analysis, which is usually called '*stylometry*'.

Academic-plagiarism is more-easily detected by the-software, such-as TurnItIn and SafeAssign, while

more-technical and complex, scientific-plagiarism--with CrossCheck of iThenticate, and eTBLAST- software. Any-such-software consists of algorithms, to-detect-similarities, with associated-databases. Publishers (editors) are-also regularly-using plagiarism-detection-software, to-verify the-originality of papers, submitted, to-their-journals. Major-publishers are-also members of CrossCheck, which uses the iThenticate-software, to-scan-papers, for plagiarism (<http://www.crossref.ithenticate.com/>). Documents are compared against a-database (<http://www.research.ithenticate.com/index.html>), containing web-pages, as well-as published-material, including journals and books (Wager, 2014).

In-biomedical-literature, for-example, Déjà vu, is commonly-used, which is an-OA-database (Errami *et al.*, 2007), developed, in-2006, and based on text-data-mining-algorithm eTBLAST, containing several-thousand instances of duplicate-publication. Studies on this-database have-been published in *Nature*, *Science* and other-reputable-journals (Long *et al.*, 2009; Errami & Garner, 2008).

Software, to-detect plagiarism, was-also-applied to-about 75,000 abstracts, in Medline (White, 2008), where in a-majority of the-cases-detected, the-software detected > 85% correspondence in the-words, in-papers, written by different-authors, suggesting that where plagiarism was used, it was done *blatantly*, with authors copying 'word-for-word' whole-sections, of the-previously-published-material.

In-addition, Retraction Watch (<http://www.retractionwatch.com/>) is a-blog, which documents plagiarism, fabrication and retractions, in the-scientific-community. Another-example is Inspec-database, which covers a-wide-range of engineering-journals, but does *not* index retraction-notice or retroactively-mark retracted-article-records, in any-perceptible-way. There-are many-more anti-plagiarism soft-wares are now offered; however, Kohler& Weber-Wulff, carried-out a-study, in-2010, on 47 systems of direct-plagiarism-detection, currently-available, and concluded that only 5 of them were, to-some-extent, useful (Sheard & Dick, 2012). Anti-plagiarism soft-wares can-detect only 'word-to-word' plagiarism; detection of data-manipulation, change in-references, adoption of ideas of others, etc. are sometimes-difficult, to-spot (Rao, 2008). Besides, these-services can-be used *only* for the English language (Austin & Brown, 1999). The-next-section, thus, will-be limited to-one of the most-popular anti-plagiarism-tools.

3.3.2.1. TurnItIn

TurnItIn cloud-based-service Turnitin® (iParadigms, Oakland, CA, U.S.A.) claims to-be-one of the most-distributed and most-reliable, in the-world, as it-is-used, by more-than 10,000-institutions, in 126-countries. *TurnItIn* allows a-variety of file-formats, mainly common-word-processors, these include: (1) Microsoft Word™ (doc, docx), (2) Corel WordPerfect® (wp, wpd, wri, doc), (3) HTML (htm, html), (4) Adobe PostScript®, (5) Text-file (txt), (6) Rich-Text-Format (rtf), and (7) Portable-Document-Format (pdf). Maximum-size allowed, for-submission, is 20MB. Besides, this-software is soundly-tested, widely available, economically-affordable, and rather-easy, to-use (<http://www.turnitin.com>).

When document is submitted, it-is originality checked against 24+ billion web-pages, 300+ million papers, and leading-library-databases and publications, across the-world. *TurnItIn* allows the-user, to-engage in a-structured and anonymous-peer-review system, fostering a-culture of cooperation and support. Table 1 shows the-general-range of text-overlap-percentage, provided by TurnItIn's-report.

Table 1: TurnItIn report-indicators

| Color | Color-code | Overlap/Matching-text, % |
|--------|------------|--------------------------|
| Blue | | 0 |
| Green | | 1-24 |
| Yellow | | 25-49 |
| Orange | | 50-74 |
| Red | | 75-100 |

However, according to-Steen (2011), the-ranges, indicated in-the-table, were determined to-be an-unreasonable-standard, due-to a-common-language, typical in-academic-papers, conventional-phrases, formal-nouns, and other-sentence-structures, restricted to-English-language. In-the-same-spirit, Blackboard (2007), also proposed a-more-liberal-range, with less than 15% being considered as-legitimate-research; 15% to 40%, is in-need of further-review, and those over 40% - most-likely, to-contain-plagiarism.

It-is-important to-note, however, that these-percentages show the-similarity of text and *not* a measure to-plagiarism; hence, further-careful-investigations and, sometimes, specialist-interpretation, are required, to-ascertain, if plagiarism is, indeed, occurred, and if so, to-what-extent.

In-Kenya, several-universities, for-example, Africa Nazarene University, have partnered with CloudHop, a-subsiary of the-Copy. Ltd., to-launch the-anti-plagiarism-software, known-as TurnItIn, but it-is-yet, to-come, to-the-MU.

3.3.1.3. Punishment

Punishment, is a-necessary-instrument, to-deal with *any*-misconduct. Punishment-type can be: legal, institutional and individual. There is, however a-predicament: who, on-what-basis (criteria, standards, rules), when and how, should-declare-someone a-plagiarist. Other-questions arise, such-as: which institutions, or which-scientific-body,

or committee, at the-national or international-level, when plagiarism is proven, can-sanction someone, and what-are the-sanctions (Wager, 2014).

Historically, first-attempts (in-1992), to-deal with scientific-misconduct, were-made, by-launching the-Office of Research-Integrity (ORI), in-the-U.S.A.; with the-main-objectives, such-as: (1) promotion of scientific-integrity; (2) development of guidelines for scientific-research; and (3) investigation of allegations of misconduct, particularly, in-bio-medicine. Based on the-U.S.A.-model, many-national-bodies, for-ethics, in-science, were established, globally. As a-result, science-editors became familiar, with multiple-cases, of scientific-dishonesty (Masic, 2012).

Another-major-step-forward was the-establishment of the-UK-based Committee on Publication Ethics (COPE; 1997). COPE introduced scientific-principles of fairness, and developed a-set of flowcharts, specifically dealing with-misconduct.

Yet, there is *no*-general-regulation, to-control scientific-research, and intellectual-honesty, of researchers, which would-be-applicable, in-absolutely-all-situations, and in all-research-institutions (Masic, 2012). In-most of the-countries, committing research-misconduct, including plagiarism, even on a large-scale, is not a-legal or criminal-offense; however in some-countries, like U.S.A. and few-others, the- law, governing the-plagiarism, is in-place, and is fully-operational.

Another-example of legal-punishment is that, under the-Criminal-Law of the-Republic Macedonia, Article 157, plagiarism is a-crime, which is prosecuted, by financial-penalties and imprisonment (Ministry of Justice of Republic of Macedonia, 1996).

On the-other-hand, plagiarism, in-Kenya, is not *only* evident, in-the-academic-world, but can-also be-traced, in other-areas, like journalism, art and music-industry. According to-the Kenya-Copyrights-Act (CAP 130), reproduction of musical, artistic-work, audio-works and broadcasting, is illegal. The first ever, and so-far, the-only, scientific-plagiarism-suit, in a-Kenyan-court, was-filed, in-2010, against Mary Ogola of the-University of Nairobi, who had allegedly-plagiarized-work, on her-Master's-thesis. The-applicant, Anne Kukali, wanted the-court, to-nullify Ms Ogola's degree, on-grounds of plagiarism. It was a-winning-case, as the-comparative-analysis of both-documents, left the-court with no-doubt that, the-applicant's intellectual rights had-been-violated, by the-respondent (Civil Suit 94, 2010).

On an-institutional and personal-level, for-example, the-Office of Research Integrity, at VirginiaTech University, U.S.A. emphasized, in-compliance, with federal-regulations, on-research misconduct, that (VirginiaTech, 2011):

The consequences of research-misconduct are variable and may include: Withdrawal or correction of all pending and published-papers and abstracts, affected by the misconduct, restitution of funds to the granting agency, and monitoring of grant applications or ineligibility to apply for federal grants/contracts or serve on review panels for a number of years or permanently. At the institutional level, research-misconduct may result in reprimand, removal from the project, rank and salary reduction, or dismissal from the institution.

In the-same-accord, Editage Insights (2012), pointed-out, that researchers and professors, usually, were punished, for plagiarisms, by sanctions ranging from suspension, to-termination, with losing their-credibility and perceived-integrity. In-cases, where plagiarism has-been repeatedly-demonstrated, the-consequences may-include: banning the-guilty-researcher, from grant-applications, and even suspension, or dismissal from-a-post.

On-the-other-hand, the-current-practice is that, when a-manuscript is retracted it-is *not* removed, from the-scientific-databases, but it-will, always, be-flagged, as being-unreliable. In the-authors' humble-opinion, editors and publishers, should-consider the-removal, of the-full-text, of all-the-retracted articles, leaving only an-abstract, and the-Retracton-notice, to-alert the-potential-readers.

Beside the-withdrawal of the-article, and the-public (written) apology, by-the-plagiarist, some editors advocate radical-solutions, such-as reporting, to-the-competent-institutions (e.g. the-relevant committee/commission, within the-related-faculty and university and/or ministry), as-well-as a-ban, on publication, for-some-period, especially for-authors, who-are repeated-offenders, or that they did-it, with evident-intent, to-deceive (Wager, 2014).

On-the-other-hand, according to Editage Insights (2012) 'Plagiarism is not a crime, per se, but is disapproved more on the grounds of moral-offence'. Honesty, in-science, is the-very-basis, of its-existence. Even a-shadow of dishonesty, may-devalue the-work, and lead to-the-loss of respect (Shamin, 2012; Hansen, 2002). Besides, Spender (2004) pointed-out that, plagiarism is *not* only a-legal-issue, but also a pedagogical-one, and rests in the-hands of academics and academic-institutions.

At-an-institutional-level, for-example, MU' Examination Rules and Regulation explain academic-integrity, purely, by-listing prohibited-behaviors, during an-exam, with corresponding punishments, rather than by identifying core-values and manner of conduct, to-be-promoted. Specific- policy on Plagiarism, on the-other-hand, is yet to-be-established, by the-university.

3.3.2. Publishing-process: *main-actors and their-roles, in dealing with plagiarism.*

In-a-publication-process, of a-scientific or academic-paper, the-key-parities, responsible, for publication-integrity and reliability, are: Author(s); Peer-Reviewer(s); and Publisher (editor(s)). The-following-sections will draw a-close-attention, to the-parties.

3.3.2.1. Authors

Scientific-writing, for most-researches, is a-rather-complex, time-consuming process, demanding an-adequate-writing-skills. A-faculty, who is a-beginner-writer, probably, has-difficulty defining their-own-ideas and differentiating, between common-knowledge and information, which needed to-be, referenced (Carroll, 2004). In-addition, they-may *not* understand, the-value of developing a-unique-idea, in a-field of study, and also they are *not* well-versed, with ethics. Therefore, they plagiarize-unintentionally, due to-genuine-lack of understanding, being *not* familiar, with proper-ways of quoting, paraphrasing, referencing and citing, or when they-are unsure, about the-meaning of ‘common-knowledge’ and the-phrase ‘in-your-own-words’. Due-to-massive-lack, of understanding, of ‘the-rules-of-the-game’, the-beginner-writers, trying to-imitate; trying-to-be like the ‘seasoned’ and experienced-authors. T. Eliot rightfully-pointed-out, that: ‘Immature [...] imitate; mature [...] steal...’

Moreover, some-faculty-members, especially those, who are-published-authors and experts, in their-field, may-believe that plagiarism, of an-original-idea, or data, is more-severe, than the-plagiarism of a- text. The-author is strongly-supports this-notion; as-phraseology, can *only* make a-real-big-difference, in-English-Literature and Poetry, or some-argumentative-arts-specialties, where more-emphasis is given-to-the-eloquence of expressions. In-science and engineering, however, researchers, do, rely on proven-tests, and solid-facts; phraseology is secondary.

Besides, all-writers, regardless of the-area of their-specialization, generally, do, habitually-exploit the-ideas or words of other-writers, during an-absolutely-necessary-process of review of literature. One of the-purposes of literature-review is, simply, to-avoid ‘reinventing the-wheel’, and hence it-is a-pre-requisite to any-solid-research. Nevertheless, even in-engineering, a-comprehensive-introduction and so-called ‘state of the art’-sections (based on a-strong-literature-review) is always a-big-plus; otherwise the-end-result would-be, not an-interesting-scientific-paper, but a-boring-technical-report.

In-addition, scholars, try-to-convince others, of the-validity, of their-opinions, or findings, by suggesting, that their-theories or findings, compare with the-established-work, of the-scholarly-authorities, on the-subject-matter. In-other-words, one’s-work becomes more-convincing, when one can directly indicate the-authorities, whose-studies it expands (Ten-Golden-Rules to Avoid Plagiarism). Moreover, some-authors, believed that it-was-acceptable to ‘borrow’ text, from different-sources and connect the extractions, to-make a-paragraph; so-called ‘mosaic plagiarism’, as-referred-to, by-Iverson *et al* (1998). This-believe is also, in-accord with Wilson Mizner, who-states that ‘when we steal an idea from one-author, it will be called plagiarism, but when we do it from a few-authors, it is called research!’ (Bartlett, 1994). On-the-other-hand, according to-Mason (2009), plagiarizing a-text may be an-indication, that data are also-falsified, which, in-the-eyes, of some-researches, constitutes a much-more serious-misconduct.

Avoiding plagiarism, during such-activities, however, is *not*, always, straightforward or easy, as it is unavoidable that, some of a writer’s-own-thoughts and ideas, will-correlate, very-closely, with those, expressed, by-others. Furthermore, according to Girard (2004): ‘What we perceive to be original-thoughts, really may be opinions and ideas, written down by others, and subconsciously-ingrained in us, through thing we have read or seen. This is a dilemma of most-writers’, meaning that authors’-intelligence subconsciously re-package the-ideas, after reading numerous-background-literature, for a-particular research. The-situation is expressed, suitably to this-context, by Trent Reznor in the-song ‘Copy of a...’: ‘I am just a copy of a copy of a copy of a copy; everything I say has come before...’ (Myška, 2015).

From the-other-perspective, Clarke (2006) has-suggested that, while there are strong-arguments for plagiarism, ‘copying without attribute can also be valuable’. He-has-stated, that ‘avoiding plagiarism requires a great-deal of effort’. He-has-also noted that, there is a-large-amount of written and published material, people has-access-to. Therefore, according to-Clarke, it-is:

Impractical to avoid repetition, uneconomic for every author to deliver originality in every element of everything he or she writes, and a waste of time and energy that could be applied to more constructive activities. Moreover, much writing within a discipline is intentionally-cumulative, and hence, the incorporation of prior-content is an-intrinsic-feature of almost-all scholarly-writing.

On the-other-hand, publishers, usually, ask the-authors, to-sign a-statement of originality, and even this-option does *not* prevent, from instances of misconduct (Masic, 2012; ICMJE, 2008; COPE, 1999). ‘Up-to the-point’ brutally-honest and sharp-slogans, such as ‘Publication at Any-Cost’ and ‘Publish or Perish’, undeniably, negatively-influence the-whole-research-environment and cultivate recycled-writing (Wager & Kleinert, 2012; Masic, 2012). Amstrong (1993) for-example, pointed-out, on the-example of a reviewer’ comment, addressed to-an-author: ‘Your-work is both; good and original. Unfortunately the parts that are good are *not* original, and the parts that are original are *not* good’. To-avoid similar-comments, authors should diligently-strive to-produce

original high-quality intellectual-contributions.

In-this-spirit, Kleinert & Wager (2011) and Wager & Kleinert (2011), for-example, summarized the-responsibilities, for-authors, as-follows:

Authors: (1) should-submit papers, *only* on-work, that has-been-conducted, in-an-ethical and responsible-manner, and that complies, with all-relevant-legislation; (2) should-present their-results clearly, honestly, and without fabrication, falsification, or inappropriate-data-manipulation; (3) should-attempt to describe their-methods, clearly and unambiguously, so that their-findings can-be-confirmed, by-others; (4) should-adhere to-publication-requirements, that submitted-work is original, is *not* plagiarized, and has *not* been published, elsewhere; (5) should-take collective-responsibility, for-submitted and published-work; (6) should-ensure, that the-authorship, accurately-reflects individuals' contributions, to-the-work and its-reporting; and (7) should-disclose, relevant-funding-sources and any-existing, or potential-conflicts of interest.

From the-other-perspective, they say, 'to-publish, is to-share', and in-many-instances, an-author, willingly, have to-share-information, even before the-actual-publication. In the-modern-day, collaborative and multidisciplinary-research, honesty, of each and every-author, is becoming a-pillar of trustworthy- science. For multiple-authors-paper, corresponding (first-author) most of the-times, relies and believes in their-co-authors' integrity. It-is imperative, however, that they-take a-personal-responsibility, for the-reliability, of the-final-manuscript, by cross-checking it, *via* anti-plagiarism-software, *before* submitting for a-review, to a-journal. In the-future, such-issues as gathering-data, cooperation, between-scientists, and in-publications will, most-probably, get more-complicated and more-difficult, to-deal-with. In this-regard, trust, and absolute-trust, is paramount, for a-faculty, to-comfortably-collaborate-with other-individuals, openly and entirely sharing-ideas, information and plans; without fear, that their-work will-be-stolen, their-reputation questioned, and their-career, ruined. At a-very-minimum, individuals should-take personal-responsibility, for their-own-honesty, and integrity, and should-strive, to-discourage and prevent-misconduct, by other-colleagues, by providing a 'shining-example' and by increasing their-awareness, on-academic-integrity.

On-the-other-hand, according to *Nature* (2006), some-countries 'offer scientists cash-prizes for publications in top-level International-journals' and hence 'a researcher measuring science in terms of dollars might be more tempted to plagiarize or fabricate data', (the-same, however, is true, of someone measuring-science, in-terms of publication, in *Nature* or *Science*). In-fact, greed and vanity, are-used to control-researchers, through promotion and awards: someone absolutely-free, from such-vices, would-be absolutely-unmanageable. Russian-mathematician Grigori Perelman, for-example, declined a Fields-medal (the 'Nobel prize for math') in-2006, saying that it 'was completely irrelevant for [him]. Everybody understood that, if the proof is correct, then no-other-recognition is needed'. Strangely, he-was *not* praised for his-complete-absence, of vanity, and his-unselfish-search, for knowledge; some-colleagues perceived his-behavior as 'strange' (Titus *et al.*, 2008).

3.3.2.2. Reviewers and editors

Journals are responsible, for safeguarding the-research-record, and hence, have-a-critical-role, in-dealing with-suspected-misconduct. This-is recognized, by the-Committee on Publication Ethics (COPE), which has issued clear-guidelines (COPE, 2009), including on the-form of retractions.

The peer-reviewing-process is the-principal-mechanism, to-ensure the-high-quality of publications. However, recent-studies have-shown, that lack of appropriate-standards, can result in-duplicate-publication, as-well-as publication of papers, which include plagiarism (Long *et al.*, 2009).

Some-authors, for-example, when planning to-submit their-manuscript, for-review, assume that no-one is going to-check, for-plagiarism. Most of the-peer-reviewers, might-believe that it-is the- responsibility, of the-editor. And editors, sometimes, rationalize, that the-process of checking, for plagiarism, is time-consuming; and especially, in-the-cases, of rapid-publication-journals, they are stretched, both; physically and time-wise; and, hence, unable, to-check-through, every-single-paper. Instead of shifting-responsibility, from one-party to the-other, clear-rules should-guide, the-entire-process. Editors of scientific-journals, also-have a-responsibility, to-discourage-plagiarism, as-well-as other-forms of misconduct, and to-be-aware, of the-effects, that such-misconduct may-have, on the-validity, of articles, they-publish (Gollogly & Momen, 2006), and therefore, on-credibility, and reputation of a-journal, itself.

Kleinert & Wager (2011) and Wager & Kleinert (2011) summarized the-responsibilities, for editors as-follows:

Editors: (1) are accountable and should-take-responsibility, for everything, they-publish; (2) should-make fair and unbiased-decisions, independent of commercial-considerations, and should-ensure, a-fair and appropriate-peer-review-process; (3) should-adopt editorial-policies, that encourage maximum-transparency and complete, honest-reporting; (4) should-guard the-integrity of the-published-record, by issuing corrections and retractions, when-needed, and pursuing suspected, or alleged-research, and publication-misconduct; (5) should-pursue reviewer and editorial-misconduct; (6) should-make-it clear, to-peer-reviewers and authors, what is expected of them; and (7) should-have appropriate-policies, in-place, for handling editorial-conflicts of interest.

Moreover, several-studies have-been-conducted, pointing-out on-lack of understanding on plagiarism,

among potential-writers (faculty) and, surprisingly, also among journal-editors. For-example, an assessment of editors of economics-journals, by Enders & Hoover (2004) revealed, that: (1) the-editors considered plagiarism to-include: using unattributed-sentences (34%); unattributed-proof, from working-paper (58.3%); unattributed-proof, from published-paper (66.1%); unattributed-ideas (16.5%); and using privately-collected-data (47.7%). Despite these-concerns, the-majority of editors (81%) did *not* have a formal-policy; to-deal-with these-issues; (2) *Only* one-editor (1.8%) responded that, the-presence of one unattributed-sentence was *not* plagiarism, whereas 34% of respondents considered it definitely to-be a-plagiarism. This-suggests confusion, in-defining plagiarism; and (3) In-case plagiarism-is-detected, the researchers found that 71% said they would definitely notify the-author; 23% would-definitely notify the author's-chair, dean, and provost; 42% would-definitely ban future-submissions, from the-author; and 13% would-definitely publicize-the-incident.

Grossberg (2004), on the-other-hand, states, that plagiarism has *no*-simple-solution, and that 'It can never be addressed-effectively, by simply turning journal-editors and, book and manuscript-reviews, into a disciplinary-police-force'. During journal-publishing-process, there is *no*, so-called, 'police-force', specifically-trained and dedicated, to-fight scientific-misconduct; all-investigations are-made by journal-editors and by experts, in-particular-areas (for example, STE). He-suggests that all-the-stakeholders should 'make a commitment to the basic-standards of ethical-conduct, which includes preventing the misappropriation of other people's words and ideas'.

Beheshti (2011), on the-other-hand, has painted a gloomy-scenario on what can happen, if plagiarism will-go-unrestrained.

If plagiarism turns into an ordinary and usual-activity, it will affect the security of scientific-knowledge and destroy all-social-realms. In such a situation, nobody will bother doing research; rather, everybody will make use of ready-made-knowledge, produced by the past-researchers and will destroy all knowledge. Such-unreasonable-behavior will devastate the foundations of scientific-progress and everything-else. And if a country loses its firm-scientific-foundations, it will remain in past-achievements and will not experience progress.

3.3.3. Plagiarism as a mere-fraction of academic and scientific-misconduct

The-rising-frequency of retractions has recently-elicited a-lot of concern (Van Noorden, 2011). Lewis *et al.* (2011), for-example, highlight increasing-rates, of retractions, from-journals, often, *without* proper-explanation, of the-reasons, behind such-a-drastic-measure.

Studies of selected-retracted-articles have-suggested, that error is more-common, than fraud, as a cause of retraction (Nath *et al.*, 2006) and that, rates of retraction, directly-correlate with journal-impact factor (Fang & Casadevall, 2011). A detailed-review of 2,047 biomedical and life-science research-articles, indexed by PubMed, as retracted on May 3, 2012 revealed that only 21.3% of retractions were-attributable to-error. In-contrast, 67.4% of retractions were attributable to-misconduct, including fraud or suspected fraud (43.4%), duplicate-publication (14.2%), and plagiarism (9.8%). Incomplete, uninformative, or misleading-retraction-announcements, have led, to a-previous-underestimation, of the-role, of fraud, in the ongoing-retraction-epidemic. According to-Ferric *et al.* (2012), the-percentage of scientific-articles retracted, because of fraud, has increased ~10-fold, since 1975.

Previous-investigators have-also-found that many-retracted-articles continue to-be-cited, as if still valid-work, but others have-documented, an-immediate-effect of retraction, on citation-frequency (Furman *et al.*, 2012; Trajkovski, 2011; Baždarić *et al.*, 2009). Most-articles retracted, for fraud, have-originated in countries with long-standing research-traditions (e.g., United States, Germany, and Japan) and are particularly-problematic, for high-impact-journals (Ferric *et al.*, 2012).

On-the-other-hand, according to a-study by Benos (2005), plagiarism contributes a smaller-percentage (7%), (see Figure 2) in-comparison with the-findings of Ferric *et al.* (2012), where its contribution was 9.8%.

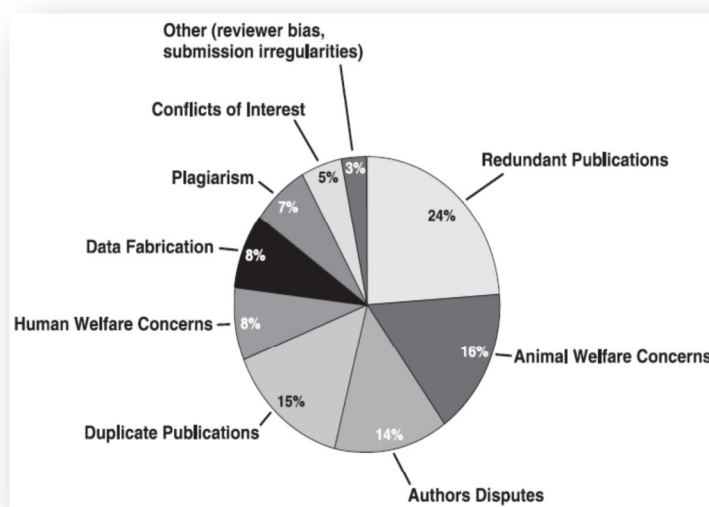


Figure 2: Distribution of ethical-issues in APS-publications: 1996-2004 (Benos *et al.*, 2005).

Some-authors, for-example, argue that, since articles can-be-retracted, for a-variety of reasons, the recent rise in-retractions, may *not* actually-reflect a ‘crisis of scientific-integrity’ which may-be superficially-suggested, by the-raw-numbers: For-example, past-surveys found that despite an-increasing number of retractions, due to-misconduct (Katavić, 2008; The Office of Research Integrity, 2010), more-articles had-been-retracted, due to-unintentional-errors (Sanjeev, 2008). For this-reason, some have argued, that article-retraction should, generally, be-disengaged from the-stigma of ‘misconduct’ (Masic, 2012). They argue that, if retractions are to-be-used, as a ‘proxy’ for measuring misconduct, then retraction, or ‘un-publication’, should-be a-last-resort, reserved for *only* the-most-severe and proven-offences (Donev, 2014; Bilić-Zulle *et al.*, 2005).

From the-above-Figure, it-is clear, that the-impact of plagiarism, in-comparison, with other-types of misconduct, is rather-limited; nevertheless the-overall-implications of plagiarism should-be-taken into-consideration, such-as: damage or, even, loss of reputation, to-the: (1) researcher; (2) affiliated to plagiarist institution, and (3) journal, itself, including reviewer (s) and editor(s). However, for some, ‘Even the threat of a damaged-reputation is not a sufficient-deterrent to such-behavior’, says Hoover (2006). Therefore, these-persistent-practices, are to-be strongly-discouraged, at-every-stage, of a-publishing process.

Besides, basic-causes of academic-misconduct, are deeply-embedded, in human-imperfections, greed, and ambition; for-example, generally, academics and researchers, are considered to-be very-ambitious, driven by the-ever-increasing-pressure, to-succeed, and to-succeed, fast. The-credentials and the-time, one taught, at a-university-level, are *not*, apparently, enough; there is a-pressing-need to-produce an-evidence of research, in-a-form of high-level-scientific- and academic-publications. Notwithstanding the-ultimate responsibilities, to-avoid plagiarism, by-authors, editors of scientific-journals should-be diligent-custodians of scientific and publishing-integrity, by timely-recognizing, and preventing-plagiarism.

According to a CAI-publication: ‘Honesty is the foundation of teaching, learning, research, and service and the prerequisite for full-realization of trust, fairness, respect, and responsibility’ (CAI, 1999); collectively, they-are-regarded as the-five-fundamental-values, of academic-integrity. In-the-same-spirit, authors, reviewers and editors, of scientific-journals, should-fight, together, against unethical-research, that contradicts five-fundamental-values, of academic-integrity, and which-is-harmful, to the-scientific community, and overall is-harmful, to the-society, at-large, by-clearly-violating public-trust. According to Starovoytova & Namango (2016b) ‘If plagiarism, however, continues, being: undetected, uncorrected and unpunished; research becomes an effortless-photocopy or duplication of earlier-studies, and suffers from lack of imagination, innovation, uniqueness and, therefore, resulting in-research of *no* scientific-value, whatsoever’.

Marusic (2012), pointed-out that, ethical-aspect of publishing, is particularly-important, for small and developing-economies; hence, active and ethical-participation, of Kenyan-scientists, in-the global-scientific-communication, should-be-practiced, according, to-international-standards.

4. Conclusion and recommendations.

4.1. Conclusion

Majority, (60%) of the-respondents alleged, that plagiarism was *never*-mentioned or explained, to-them, at any-level. The-other-main-finding was that Plagiarism-policy is, yet to-be-established, at the-institutional level.

Jointly, these-findings suggest, a-possible-lack of understanding on-plagiarism, due to inadequate-awareness; as-well-as, a growing-and timely-need of clear-institutional-policy on Plagiarism, pointing, probably, on currently-misplaced-institutional-priorities, alongside with financial-constraints, presently, obstructing design, implementation and enforcement, of such-a-policy.

On-the-other-hand, the-number of quality-publications, in peer-reviewed-reputed-journals, their-citations and usefulness of patents, are commonly-used, as a-measure of a university-reputation, so called 'ranking'; the-higher the-number of quality-research-publications, citations and patents, the-higher is the-academic-reputation, of the-institution. Hence, it-is-only logical, and, beneficial, for any-university, to strive to-provide, an-internal-quality-control and ethical-environment, leading to-a-cherished-tradition of prevention scientific and publishing-dishonesty, including plagiarism. Raising awareness, proper-instruction and guidance, on-plagiarism, at all-the-levels; from undergraduate all-the-way-through, to-doctorate-studies, and also faculty, is therefore, required. Secondly, to-ensure quality and integrity of scientific and academic-publications, there-should-be a-collective, as-well-as, an-individual-responsibility and united, rigorous and dedicated-efforts, by all-the-parties, involved, such-as: authors, particularly a-corresponding (first) author; reviewers, and editors.

Furthermore, so-far, no-records are-available, showing that African-scientists were accused of some-research and publishing-misconduct, including plagiarism. Nevertheless, plagiarism should-be-taken very-very-seriously, in order to, not only, avoid the-sanctions (in-the-form of retraction and possible-damage to a-reputation of an-author), but to-avoid, even, being suspected of a 'dirty'-misconduct. To-achieve this, all the-potential-authors should make their-best-effort, to comprehend-well, the very-essence of plagiarism, and most-importantly, how to-avoid it, hence, producing an ethical-publication of high-scientific-value, proudly and spotlessly representing the-intellectual-input of academic and scientific-community. The-author trusts, that this-publication is rather-informative and, hence, useful, for any-actor, involved in publishing-process.

To-conclude, the-generalizations of this-study are limited, to-the-faculty, who-agreed, to participate, however, it will-be naive, to-presume, that the-situations described are specific, to-a-particular engineering-school or university.

4.2. Recommendations

Several-recommendations, highlighted, in this-section, are presented level-wise.

- (1) At an-international-level, a-database of all-cases of plagiarism, should-be launched, with disclosure of all-the-names of blacklisted-plagiarists, and affiliated-institutions, and journals.
- (2) At a national-level, all scientific-institutions and all-universities (public and private) should have a Center for surveillance, security, promotion and development of quality-ethical-research and publication.
- (3) At the university, a-Policy on-plagiarism, should-be-established, which to-be disseminated among-students and staff; and preferably, published on the-university' web-site, in-libraries, in Dean' and HoD' offices, and in-hostels, as-well.
- (4) Subsequently, researchers should-be-educated on correct-citation-usage and intellectual property law.
- (5) In-order to-promote and nurture academic-integrity, the author' advice, to our-colleagues and to the-administrative-staff, in the-university, is to-read this-paper and to-discuss, reflect on, as-well as, pursue its-recommendations, for institutional-action.
- (6) To researchers is recommended to-use anti-plagiarism-software, to-identify plagiarism or self-plagiarism, which, possibly, they themselves are not aware of, in-order to-preserve public-confidence and spotless-professional-reputation.
- (7) Further-research, to-compare the-prevalence of retracted-articles (due to-plagiarism) between 'seasoned' and 'greenhorn'-writers should-be-conducted, to-ascertain, who plagiarize more and why.

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