

Scientific Integrity In Students, Professors And Universities: A Circumstantial Analysis Of The Situation

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Keywords:

Scientific, Research, Integrity, Practices, Plagiarism, Conduct.

ABSTRACT

Good scientific practices are a set of individual and organizational actions and behaviors based on fundamental values of science that express the principles and responsibilities that scientific integrity entails. Good scientific practices sustain responsible conduct in research because they maintain the pattern of conduct provided by regulations and declarations considered binding, which are characterized by promoting ethical principles, who a rigorous practice contribute to scientific progress.



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1. INTRODUCTION

Higher education institutions must guarantee scientific integrity, codes of ethics and good practices as a normative framework of reference are key pieces [1- 4]. The opposite of scientific integrity, that is, cases of fraud such as plagiarism, falsification and fabrication, as well as other reprehensible conduct in research, continue to occupy headlines with no more significance than media dissemination, at least in our context [5]. The treatment of scientific integrity by European higher education institutions is diverse. Systems based on principles contained in codes of ethics, coexist with formulas in which rules and procedures for investigating fraud and scientific malpractices are clearly established and accessible so that, where appropriate, the corresponding actions can be taken [4], [6], [7].

Most institutions seek to encourage and develop research and innovation; However, not only intentions are enough, but it is also necessary to establish adequate mechanisms to achieve the desired goals [4], [8- 13].

The promotion of integrity in research emanates from many factors, however, among those considered fundamental is in the figure of the educator [11], [12]. He should know honesty in other research and professional contexts [12]. From our position we consider it appropriate that in any process that tries to promote scientific integrity, those responsible must carry out a combination within the context of application of four aspects: the ethical dimension of the problems, development of competences of reason, moral motivation and formative identity and self-regulation and self-efficacy of scientific practice [6], [14- 17].

Academic integrity is a central part in the integral and ethical formation of students, both at school and

university level. The meaning of education is to collaborate to develop all the potentialities and capacities of the student, so that they are expressed for the benefit of the community [3], [8], [9], [11], [14], [16], [18]. In this sense, university education is focused, which is oriented in an integral way, in the disciplinary and in the value, to contribute to the common good of society. This responsibility is based on the veracity of the knowledge acquired, key in the scientific and professional performance of graduates [19]. The installation of a culture of academic integrity in universities is of the utmost importance since it allows to highlight its crucial aspects. On the one hand, it highlights an aspect that is fundamental in university education; promotes the quality of the educational project; recognises the key role of teachers and students in an active learning process; enhances student accountability and self-regulation; It allows to avoid actions that threaten the integrity and enhances the management and sanction of the faults that arise, with emphasis on the training of students [3], [9]. Among the values to be promoted are honesty; truthfulness; building trust in collaborative work; justice and equity; respect for academic work and one's own responsibility to assume the consequences of the actions carried out. Academic integrity represents a critical issue in the processes of intellectual production and scientific creation as it has been clearly evidenced by the transition from traditional printed text to digital formats, which open the debate on the use of information and the possible effects related to its reproducibility, alluding to the context of cultural industries [3], [9]. A first approach to the context of study presents the analysis of the regulations at national and international level that allows to support the need to bet on respect for copyright as a permanent practice in the scriptural development of the actors in the context of higher education.

2. Methodology

Various sources and documents on integrity and scientific misconduct were analyzed through searches in databases such as: Pubmed, Google Scholar, Scopus, among others. 48 scientific articles were analyzed, between reviews and original articles in Spanish and English from 1998 to 2022.

3. Attitudes and practices of university students related to scientific and academic integrity

We understand by scientific integrity the pattern of conduct that is held in an investigation, which is characterized by the observation and promotion of each of the ethical principles, which guarantee a rigorous and responsive praxis, so that there is progress in the scientific community is to have assistance in those concerning the principles of scientific integrity which allow it to be carried out correctly guided by the necessary guidelines to be realized [3], [9], [20], [21]. Good scientific practices are a set of individual and organizational actions and behaviors based on the fundamental values of science that express the principles and responsibilities that scientific integrity entails. Good scientific practices support responsible conduct in research [22].

In this new context, good scientific practices become important, which has led various organizations worldwide to declare principles for responsible and ethically correct scientific activity [23].

It is considered that the creation of scientific knowledge through research should be based on the trust that should exist about the moral and professional integrity of researchers. The aim of this research is to foster a culture of respect for copyright in the university context, which implies raising awareness of the importance of ethics. If, since a researcher is being trained, he learned to respect the moral right of the author of another work, plagiarism would be avoided. But since such a copyright culture does not exist, then corrective action must be taken against its commission [3], [21], [24- 26].

In the development of scientific research there is a whole series of behaviors far from rigorous and responsible praxis that, according to the effects and consequences derived from them, can be categorized [6], [27- 30].

The most serious violation of good scientific practices is the manufacture and falsification, although it is commonly accepted that scientific malpractice also includes plagiarism. In addition to manufacturing, falsification and plagiarism, there are other unacceptable practices that, without falsifying or distorting the recording of data and results, constitute irresponsible and, therefore, undesirable behavior [3], [7-9], [14], [20], [24], [31- 34]. That is why it is necessary only to the background of scientific integrity so that these deviations do not occur that as a result lead to malpractice within the scientific process.

The ethics of research seeks to ensure that research involving human beings as research subjects are carried out respecting the three fundamental ethical principles: respect for people, beneficence and justice for this, the main objective of this work is to inform the reader so that he is aware of carrying out the work with good ethics, giving recognition to the person who created said work [35].

The Singapore Declaration (2010) states that researchers when evaluating the work of others must be impartial, prompt, rigorous and respect confidentiality. This as a basis for research and integrity [1], [2].

We can conclude that scientific integrity is the fundamental basis of all research since thanks to this the foundations of good practice can be created when carrying out scientific development.

Nowadays, scientific research requires not only compliance with the recommendations given by various national and international standards in which ethical aspects are implicit [1], [2], [21]. In 1981, in the United States, four cases of scientific misconduct (MCC) were reported, a fact that caught the attention of the Congress of the United States of America; Subsequently, the appearance of similar cases (plagiarism, scientific fraud, etc.) was more frequent. Given this, in 1989 a commission of experts was created in the United States to analyze this type of problem; in 1992, the Office of Scientific Integrity (ORI) was created and in 1995 the Ryan Commission presented a report detailing the definitions of scientific integrity (CI), misconduct in science, etc [36], [37].

The lack of ethical and methodological rigor in academia highlights the need for changes in health education in order to re-establish good scientific practices [18], [38], [39].

The pressure exerted on researchers by the criteria used for promotion and reward, which prioritize the quantity of works over their quality, the existence of a market for buying and selling scientific articles and the proliferation of predatory journals that operate with null or minimum ethical standards [3], [20] are considered as factors favoring this fraud [3], [20].

The emergence of ethical approaches, as well as the current regression towards moral dogmatism, in the field of scientific research, is generated thanks to the crisis of ethics and morality in the investigative environment [12], [13], [40]. In recent years, the discourse on scientific integrity has been prolific, which has linked it to ethical aspects of the researcher's work and related to the (good or bad) practices and (good or bad) behaviors arising within the research processes.

If scientific integrity is conceived as an element that evaluates, judges, measures, coerces and punishes the bad practices of the researcher, the concept is being limited from its nature [8], [14], [15], [33], [39]. Thus, the following questions arise: why scientific integrity and not just integrity? Why give it a last name when integrity is holistic in its essence and principle? [14].

In recent decades, in the various media, many personalities, writers, politicians, scientists and others have

been denounced for crimes of plagiarism or scientific fraud; In the 2016 presidential elections, a presidential candidate was denounced for alleged plagiarism in his doctoral thesis; At the end of 2017, an Argentine doctor requested an investigation into the alleged plagiarism of his book 'Official story: surgical injury of the bile duct', published in 2017 by a Peruvian doctor through the Fondo Editorial Comunicacional (FEC) of the Medical College of Peru (CMP) [38], of which I was a member. In this regard, the current concepts of scientific integrity and scientific misconduct do not exist in both the current rules of procedure and statutes; nor in the current Code of Ethics [38].

Scientific and academic integrity is increasing more and more in all areas of science, which worries members of the scientific community, who seek consensus and alternatives to address this problem. In particular, the academics and pedagogues responsible for the training of future professionals are engaged in the design and implementation of appropriate strategies to develop skills from educational practice to mitigate this problem and its consequences [41].

The issue of unethical behavior in universities and scientific research where one of the most important aspects that these authors highlight, is that this type of behavior not only harms those who commit them. This is a strong wake-up call to combat what appear to be isolated behaviour, which, according to offenders, and those who hide these facts, have little impact; The reality is that misconduct seriously affects the image of the university, science, academics and students.

The knowledge society is characterized by generating wealth and well-being, based on the fact that R + D + i has been put at the service of development. In this new context, good scientific practices become important, which has led various organizations worldwide to declare principles for responsible scientific activity (Singapore Declaration 2010, ESF 2011) [42].

In the scientific community, research activities require evaluation, particularly sensitive are peer review processes, which regardless of scientific rigor are based on trust, so they are not exempt from problems associated with the bias of scientific judgments, undisclosed conflicts of interest, misappropriation of research results, among others, leading to poor scientific practices [43].

In recent years, the discourse on scientific integrity has been prolific, which has linked it to ethical aspects of the researcher's work and related to the (good or bad) practices and (good or bad) behaviors arising within the research processes. If scientific integrity is conceived in this way, that is, as an element that evaluates, judges, measures, coerces and punishes the bad practices of the researcher, the concept is being limited from its nature [44].

The problem of plagiarism in research is a real and current fact in many universities. At the beginning of 2011, the international community was surprised to learn of the case of the German Minister of Defense, Karl Theodor zu Guttenberg, who lost his doctorate degree in law and his public office after it was discovered that he had plagiarized approximately 20% of the 475 pages of his doctoral thesis. Also, in 2012, an international scandal arose when the case of the president of Hungary, Pál Schmitt, who had his PhD degree revoked and resigned from position 3 of president after it was found that he had plagiarized more than 197 pages of the 215 that make up his doctoral thesis [45].

3.1 Academic and Scientific Fraud

The growing complaints to researchers and institutions for non-compliance with requirements of both Good Research Practices and a series of agreements, guidelines, principles and regulations, as well as the recurrence

of plagiarism, fraud, phantom authorships, impersonation, improper references: show the importance of the actions of editorial committees and editors of scientific journals [1], [2], [15], [20], [34], [39]. On the other hand, integrity sustains and strengthens society's trust in science and in the work of scientists. However, the integrity and responsible conduct in research is the essential element to consolidate a reliable scientific heritage, which allows the advancement of knowledge and improve our living conditions, health and well-being [4], [9], [14], [37], [46]. Deficiencies in scientific integrity are increasingly evident, particularly in Colombia, where they affect even students of health professions. In Colombia, the editorial committees of scientific and informative journals in the field of dentistry face, like most editorial committees at the educational level, the challenges imposed by research systems that demand validity, credibility, reproducibility, correct procedure, transparency and quality, conditions that allow the products of the scientific community to be known. debated and evaluated by society [8], [9], [16], [18], [24]. Scientific fraud is a serious obstacle to individuals, institutions and to the development of science itself [11]. Scientific fraud in biomedicine can have important consequences for public health, in addition to involving substantial economic losses, mainly of public money, and social losses that affect the image of research and researchers [6], [11], [29], [30], [36], [39]. The Recommendations for the Preparation, Submission, Editing and Publication of Scholarly Papers in Medical Journals, prepared by the International Committee of Medical Journal Editors, consider misconduct to include "data fabrication, but is not limited to this aspect, and falsification of data including misleading manipulation of images and plagiarism" [17]. In general terms, any violation of professional codes of conduct during any phase of the research process can be considered as misconduct, defined as scientific fraud that serious conduct that has a clear intention to deceive, this intention being the very antithesis of ethical behavior in science [1], [21], [37]. Ethical faults can have different levels of severity: "From the fabrication of evidence, falsehood and plagiarism, to a varied picaresque to get more with less [47], [48].

4. Conclusion

Good scientific practices sustain responsible conduct in research because they maintain the pattern of conduct provided by regulations and declarations considered binding, which are characterized by promoting ethical principles, who a rigorous practice contribute to scientific progress.

Acknowledge

To students of the Research course of the Simón Bolívar University.

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