

# PROFESSORS' PERCEPTION OF SCIENTIFIC ACTIVITY IN THE FACULTY OF MEDICAL SCIENCES OF THE UNIVERSITY OF GUAYAQUIL



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## ABSTRACT

Research is considered a function aimed at obtaining new knowledge and its application for the solution to problems or questions of a scientific nature, The universities framed in the fulfillment of their social function have a complex task given by training a competent professional who assumes research as part of their training and who learns to ask questions that they are able to solve through scientific research. Scientific research is an indicator of the quality of processes in the university environment, so it must be increased by virtue of the results of the work carried out by research teachers and students the objective of this work is to know the perception of the teachers of the Faculty of Medical Sciences of the University of Guayaquil about the scientific activity.

**Objective:** to know the perception of the teachers of the Faculty of Medical Sciences of the University of Guayaquil about the scientific activity.

**Methods:** theoretical and empirical level were used, a questionnaire with closed questions aimed at knowing the opinions on the research activity in this institution was applied.

**Result:** that of the sample analyzed 309 (39.3%) said they agreed with the training for the writing of scientific articles. 38.6% said they agree with the training on research projects.

**Conclusion:** that teacher's research should be enhanced to ensure the formation and development of research skills in students.

## 1. INTRODUCTION

Scientific production is an indicator of the quality of processes in the university environment, so it must be increased by virtue of the results of the work carried out by research teachers and students. Taking into account that university research has a strategic nature given its importance in the search for answers and established solutions of science and society, it is established as the basis for the progress and improvement of health services and is related with the economic and social development of a country. Through its research processes, the university undoubtedly has a responsibility before society as a whole, since the latter requires the university to produce, among other things, socially valid scientific knowledge capable of generating creative solutions in the multiple areas of social endeavor. (González, J. 2017)

The Faculty of Medical Sciences of the University of Guayaquil has a high level of relevance and its contributions become relevant, since they induce new perspectives and institutional efforts, basically in what has to do with its management processes, the tendency to become Entrepreneurial and innovative faculty; but in a special way, to look for mechanisms and specific experiences that help the University to improve its management processes based on the contribution to society. There must be transformation in the institutional culture and its members, which entails changes in the way of guiding, directing, in the ways of carrying out educational practices and management practices.

Universities constitute the central nucleus that guarantee the technological scientific development of a country, they are the main generators of knowledge. This scientific development of an institution can be measured by scientific production, which is determined by the number of publications in scientific journals and constitutes an indicator that allows evaluating the scope of its contributions to the development of knowledge. (González-Saldaña J. et.al., 2017)

In Ecuador, the main problems related to low scientific production are given by: Low number of research projects -Non-existence of research groups- Insufficient number of publications in regional and SCOPUS journals-Little motivation on the part of teachers to publish articles scientists - Insufficient training in research methodology and scientific writing - Lack of knowledge of the journal teachers where to publish - Insufficient knowledge of scientific research methodology - Lack of or little collaboration between national and / or international inter-institutional networks - Little participation in activities of teaching innovation -Large research funds in National and Autonomous calls - Lack of or scarce collaboration between national and international inter-institutional networks

A great problem is the lack of incentive of teachers and students for scientific research. (Martinez-Folgara, & Salomón, 2016), if it is not attended to on time, it can negatively influence university development, by preventing the development of a research culture in this area. In the author's opinion, this problem should be addressed with priority by universities, must constitute a strategic objective within the management of university processes in the strategic plans of IES.

It is important that the managers of scientific activity in universities, promote the development of methods and strategies that enable teachers and students to acquire research skills that allow them to investigate, with all the knowledge that comes from each of the subjects and to act as true seekers of the truth of science. (Mur Villar et. Al., 2016)

The need to develop methodologies, models or strategies that enhance scientific production in the university setting is imminent, thus enhancing the scientific development of a country. It is necessary to promote multi and interdisciplinary research projects that strengthen professional training from the career and make possible the articulation of the undergraduate with the postgraduate and the scientific-technological and humanistic domains of the university. Interdisciplinary research should be structured, in relation to areas of knowledge for sustainable development oriented to the application of knowledge in solving the problems presented by the community and the environment.

Research opens a new and interesting world in which continuous personal and professional improvement can be experienced and this is a guarantee of quality for the institution. However, "the fact that a university professor excels in research does not necessarily imply that he possesses the skills for a the university teachers must have early contact with research activities, particularly those organized in research groups to acquire that kind of skill. On the other hand, research groups are potentialized with the presence of young students. In the curriculum of medical science careers there are subjects that are responsible for the formation of research skills in students since the early years of the career. However, they are not enough to train a professional with research skills. It is necessary that research be promoted from all subjects of the curriculum, and that teachers include it as transversal axes in the training of their students.<sup>5,6,7</sup>

Scientific production is defined as the result of written supports, of research work carried out by researchers, research group, department, center or university in which contributions that contribute to the growth and evolution of science are disseminated. Thus, scientific production includes the publication of articles in national and international journals indexed in the different databases. Also included in this category are published books or book chapters.

To evaluate scientific production, there are quantitative indicators, the main ones are: impact factor, measures the frequency with which a journal has been cited in a specific year, immediacy index, which measures the speed with which the articles of a journal are cited. scientific journal and allows to identify leading journals in research, H index and G index, both based on the publication history of the authors and authors, and quartile that is an indicator or measure of the position of a journal in relation to all of its area.

Scientific production is evaluated to establish criteria about scientific research in a country, plan the allocation of resources, justify investments and formulate policies with an objective basis, among other possibilities. On the other hand, this evaluation allows corroborating the materialization of the knowledge produced, as the result of all the academic and scientific activities of the researchers. Therefore, it deserves to be evaluated with the appropriate indicators, to analyze what, who, how, why and when it was produced, in order to infer developments in science as a social activity.

It has been recognized that high-quality scientific production measured through publications is a source of high impact in the construction of the so-called world rankings of University institutions.

A concept linked to satisfaction is perception. The concept of perception and social perception has been developed from social psychology. According to Baron and Byrne (2005) "social perception is the process by which we seek to know and understand other people."

Teachers are not solely responsible for the results and the quality of the educational system, nor can they take on the challenge of change in an isolated and individual way; however, they have a leading role in shaping the learning experiences of students. The training of teachers on student scientific activity is important and necessary to promote this indicator in universities. Teachers must incorporate research in their professional performance in correspondence with the explicit mission to which future graduates are called in order to successfully face their work environment.

## 2. MATERIAL AND METHOD

This is a non-experimental descriptive research conducted at the Faculty of Medical Sciences of the University of Guayaquil to a group of teachers the sample consisted of a total of 197 teachers from onwards to whom a questionnaire was applied with closed questions aimed at knowing their perception of the research activity in this institution. The main variables present in the questionnaire included objective questions about participation in training on scientific writing, in research networks, knowledge about the lines of research, motivation, knowledge of the journals to publish and the dissemination of research activities, among other.

## 3. RESULTS

Of the sample studied, 197 teachers said they agreed with the training for the writing of scientific articles. Table 1 shows the graduates' perception of the training of scientific articles. The largest number of students felt that they agreed and strongly agreed with the same 2,79 ±1,241. To achieve the quality of any institution or process, permanent improvement must be an inseparable part of the procedures to be performed.

According to goal objective about identify the perception of teachers of the Faculty of Medical Sciences of the University of Guayaquil regarding scientific production, Training on writing scientific articles, Training for project development. Budget allocation for publishing. Laboratory operation, Accompaniment in the development of research projects, Budget allocation to execute projects, Disclosure of magazines to publish, Disclosure of research activities, Availability of time for research, Knowledge of the research lines, Functioning of research groups and Existence of agreements or strategic alliances.

**Table 1:** Mean and standard deviation for the indicators of the teacher's perception dimension on scientific production

Subdimensions	Mean ± DS
Teachers' perception	2,49 ± 1,274
Student perception	3,61 ± 1,330
Perception of graduates	2,79 ±1,241

Own Elaboration (Daher J. 2019)

Table 1.- shows in a general way the perception of teachers according to the mean score obtained from the responses given by the actors participating in the study; As can be seen, the means and SD obtained are between the

medium levels (2 to 3.99) and low (1 to 1.99). Which denotes that there are shortcomings in the Faculty of Medical Sciences regarding the perception of users about scientific production.

Below is the analysis of the indicators of the subdimension perception of teachers on scientific activity in the Faculty of Medical Sciences.

Table 2. Mean and Standard Deviation for The Indicators of The Subdimension Perception of The Scientific Activity of Teachers

Indicators	Mean ± SD
Training on student scientific activity	2,90±1,264
Training on writing scientific articles	2,48±1,264
Budget allocation for publishing	1,72±1,039
Laboratory operation	1,32±,843
Training for project development	1,66±1,050
Participation in research networks	3,11±1,508
Participation in scientific societies	2,49±1,198
Accompaniment in the development of research projects	2,39±1,592
Budget allocation to execute projects	2,91±1,358
Motivation towards research.	3,48±1,409
Knowledge of the lines of research.	2,24±1,333
Disclosure of magazines to publish	2,94±1,441

Own Elaboration (Daher J. 2019) n = 197 teachers

Regarding training on student scientific activity and on writing scientific articles, the mean and SD obtained were  $2.90 \pm 1.244$  and  $2.48 \pm 1.264$  respectively (medium level), which denotes that the training received by the students is insufficient. teachers in these topics, on the other hand training for research projects was also shown at a low level  $1.66 \pm 1.050$ . These results differ from those published by Mendoza Valladares, J, L) and Ruth Roux 2016) who refer that the continuous professional development of teachers is considered a fundamental piece for the development of countries. Starting from the understanding that teachers are the ones who train future members of a society by interacting directly with students, it is recognized that their continuing education is crucial to strengthen the development of society.

The development of policies and strategies for continuous professional improvement not only allows teachers to stay at the forefront and continue with their preparation throughout their careers, but also helps teachers offer quality academic and research services that favorably influence the training of students (Mendoza Valladares, J, L and Ruth Roux 2016). The training of trainers program established at the university does not include the subject of writing scientific articles or student scientific activity, this program includes the subject of preparing degree projects, despite these, this does not justify the poor teacher improvement in this area

When inquiring about the budget allocation and the operation of laboratories and physical spaces for research, levels were obtained below  $1.72 \pm 1.039$  and  $1.32 \pm .843$ , which indicates that there are serious deficiencies in this area, on the other hand the allocation of budget to execute the projects obtained an average of  $2.91 \pm 1.358$ , these data behave in a similar way to the investigation entitled Perception and attitudes towards scientific research, (Ortega Carrasco, RJ, 2018) who obtained as a result that less than 20% of those surveyed consider that their faculty has infrastructure suitable for scientific research, which has been significantly influenced by the lack of budget allocated for research.

Participation in research networks and scientific societies was another indicator to take into account, the mean and SD obtained were  $3.11 \pm 1.508$  and  $2.49 \pm 1.198$ , medium and low level respectively, in these indicators it is necessary to point out that constitute a flaw today. The participation of teachers in scientific societies is very scarce. These results coincide with González SJ, 2017 who, in a study entitled Scientific production of the medical school of a Peruvian university in SCOPUS and Pubmed, suggests that the scarce scientific production can be explained by a lack of collaboration networks between institutions and researchers, the shortcomings in the training of students and teachers on research topics, the low availability of research funds and the precarious research culture. The support in the development of research projects as well as the budget allocation for them obtained an average of  $2.39 \pm 1.592$  and  $2.91 \pm 1.358$  (medium level) respectively, which denotes that the support given to them is

insufficient. performs the teachers for the development of research projects by the department's research department, as well as the budget allocation, both elements are essential to achieve quality scientific activity.

On the other hand, the motivation towards research obtained an average of  $3.48 \pm 1.409$ , the teachers in many cases are motivated, which could negatively influence the insufficient knowledge in research methodology that in some cases exists. Knowledge of the lines of research and the dissemination of the journals in which to publish obtained a mean of  $2.21 \pm 1.333$  and  $2.94 \pm 1.441$  (medium level) respectively. The need for a greater socialization of the lines of research and of the journals where to publish in the Faculty of Medical Sciences is notorious.

In the results obtained when surveying the teachers, the time of dedication could have influenced, since the highest percentage was represented by part-time teachers, a total of 97 teachers for 49.2%. These teachers have less time dedicated to research activities, which may be an influencing factor in these results. On the other hand, a total of 57 part-time teachers had a master's degree and 40 were specialists, which also at the author's discretion could affect scientific production.

**Table 3:** Anova of the indicators of the teachers' perception subdimension

ANOVA						
		Sum of squares	gl	Mean quadratic	F	Sig.
Training on student scientific activity	Between groups	52,344	4	13,086	9,633	,000
	Within groups	260,824	193	1,358		
	Total	313,168	197			
Training on writing scientific articles	Between groups	23,994	4	5,999	3,983	,004
	Within groups	289,153	193	1,506		
	Total	313,147	197			
Laboratory operation	Between groups	36,830	4	9,208	17,268	,000
	Within groups	102,378	193	,533		
	Total	139,208	197			
Training for the preparation of projects	Between groups	46,431	4	11,608	13,127	,000
	Within groups	169,782	193	,884		
	Total	216,213	197			
Participation in research networks	Between groups	26,072	4	6,518	2,983	,020
	Within groups	419,471	193	2,185		
	Total	445,543	197			
Participation in scientific societies	Between groups	14,138	4	3,534	2,541	,041
	Within groups	267,101	193	1,391		
	Total	281,239	197			
Accompaniment in the development of projects	Between groups	37,303	4	9,326	3,898	,006
	Within groups	459,377	193	2,393		
	Total	496,680	197			
Budget allocation to execute projects	Between groups	33,324	4	8,331	4,874	,011
	Within groups	328,209	193	1,709		
	Total	361,533	197			
Motivation towards research	Between groups	19,325	4	4,831	2,508	,043
	Within groups	369,863	193	1,926		
	Total	389,188	197			
Knowledge of the research lines	Between groups	33,694	4	8,423	5,141	,001
	Within groups	314,611	193	1,639		
	Total	348,305	197			
Disclosure of magazines to publish	Between groups	1,402	4	,350	,166	,956
	Within groups	405,867	193	2,114		
	Total	407,269	197			

Own Elaboration (Daher J. 2019)

When analyzing the ANOVA applied to the indicators of the teachers' perception subdimension, it can be observed that there are statistically significant differences in the indicators: training on student scientific activity, operation of laboratories and training for the preparation of projects, since the results were be less than 0.001.

#### 4. DISCUSSION AND RECOMMENDATIONS

The motivation for greater scientific production should be instituted with the endorsement of the university authorities, thus in this way, The teachers who are the work tutors, They must guarantee that for each thesis that they tutor their interns, they must prepare manuscripts to publish in indexed journals in a manner, when medical professionals graduate, they must compulsorily have their degree work tutors, in order to be able to incorporate, elaborate and publish scientific articles of their thesis in indexed journals, this would contribute to the strengthening of the scientific productivity of the Faculty of medical knowledge of the University of Guayaquil, would help a lot to the accreditation of the Institution against the CASES. In the field of Medical Education, health research has been recognized as an important component in the training of students, being essential for scientific advancement and health care<sup>12</sup> However, there are few researches that students publish during their University education

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#### CONFLICT OF INTEREST

The author have declared that no competing interests exist.

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