

The University Teacher as a Scientific Researcher **Universidad de Guayaquil**

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SUMMARY: *The institutional lines of scientific research of the Universidad de Guayaquil are closely related to the problematic axes of Ecuador in the global context as a process of globalization. So, research centers of the university are focusing on various lines of research; for instance, culture, democracy and society. The present work is routed to the analysis of the current state of things of the university professor of our country. For this purpose, it has resorted to various sources of information so that it will be possible to produce a comprehensive work and made from various perspectives, without trying to structure considerations getting some conclusions with a claim to objectivity. Moreover, this is a work of great relevance in order to optimize the resources available in Ecuador to move into the global scientific context.*

Keywords: *Scientific research, university professor, research lines, integral work*

I. INTRODUCTION

The objectives of this paper are harmoniously integrated into a 'structured whole'. As the first objective, it should be noted that the language being used is as accessible as possible, taking into account that, as requisites for Scientific Research, there are terms that are impossible to avoid. To this end, a variety of sources has been used to extract the most relevant concepts and to expose them in a language that is accessible to teachers at the Universidad de Guayaquil and also to the university community of Ecuador. This is one of the reasons why Ecuador lags far behind in the field of scientific research, which must be overcome as soon as possible. It cannot continue this way in this 21st century.

Another objective is constituted by the fact that this work has essentially used electronic reporting which is necessary to make this information accessible to the scientific community and to university teachers in Ecuador at the global level. To be more explicit in this regard, this work is intended to provide an intrinsic motivation for Ecuador to join the 'World's Scientific Community'. It will be a long and complex process, but it is necessary to begin to publicize the results of the few researches of the university teachers and to encourage adequate exploration of the current standards of the 'Methodology of Scientific Research'. In this 21st century, scientific knowledge and technological advances are not yet part of the everyday dictionary of Ecuadorian society. The connection between technology and computer is uncommon in the country (Cevallos, 2004). Overcoming such a current state of affairs means the elimination of information barriers from the point of view of the fluidity with which scientific information is collected in Ecuador and, more specifically, the Universidad de Guayaquil, and ensuring that important information is disseminated within the country, in the region and to the world. It is essential to make explicit mention of the sources, besides being a requirement of the APA style with which the present work is developed; because it is necessary to respect copyright and give credit to those who have served as sources of inspiration. This is also intended to acknowledge the faculty-researchers of the Universidad de Guayaquil, whose works are cited here, with the express mention of their bibliography in the respective section of this paper and also, within the context of this work (DIPA, 2016).

Considering the previous works and research on this subject being discussed, they are not many, but the few available are of very good quality. This paper begins by mentioning the need to explore a dissertation on scientific research in Ecuadorian universities. It should be noted that this thesis carries a detailed historical review; affirming the fact that 'until the 1970s, Ecuadorian universities were dedicated exclusively to teaching, with very little space for research; with little reading and even with very little literature and bibliography available'. There were few publications. For the most part, the 'Annals' of the universities and books of private initiative were produced at the historic basis of patronage" (Ayala 2015). It is said that most of the texts available until the 1970s were limited to a few articles and some speeches revealed that the situation in 'Scientific Research' in Ecuador was quite precarious. Researches were carried out but they were limited to undergraduate theses that were repetitive and monotonous. At that time, most of the few original theses were from the area of law which was all too familiar, being referred to as part of the Ecuadorian culture. However, the scientific research ended with the same thesis, since lawyers once they graduate, were dedicated to the professional practice, and not involved in university teaching and policy. So, scientific research, in the strictest sense, was limited to timid assumptions; as was the case of some who were self-financing, for example, Jacinto Jijon and Caamano in the areas of historiography and archaeology. As far as medicine was concerned, only the isolated

case of Pablo Arturo Suarez stands out. In addition to undergraduate theses, dissertation was the only product of scientific research. But the most curious aspect was that the best known works were of the advocates. Dr. Gabriel Cevallos Garcia was one of the most truthful historians and of greater prestige and scientific/literary strength of Cuenca, considered at the same time as one of the most remarkable Ecuadorian essayists of the twentieth century (Aviles, 2006).

Furthermore, another paper entitled 'University, Scientific Research and Development in Latin America and Ecuador'; in which you can read, among other aspect, that resources that have been channeled towards the education sector have focused on the primary level neglecting higher education and transfer of scientific knowledge and technology. This policy, which shifts to the marketplace the function of strengthening both higher education and developmental capacity in science and technology in support of the requirements for economic growth and social demands, has led to a chronic under-allocation of resources for universities; above all, weakening education at the post-graduate level, and the development of scientific and technological research (Larrea, 2006). Note that, this paper also highlights the international inequalities in scientific and technological investment. It is clear that, in addition to the role of universities in the training of high-level human resources, they must satisfy the pressing and urgent need for the development of scientific and technological research. The obvious inequalities existing between North and South in science and technology are evident. Developed countries invest four times as much Gross Domestic Product (GDP), while twelve of these countries have ten times more researchers per million of the population than Latin America. So far, it seems that it was a study focused on Latin America and not Ecuador. Nonetheless, what is preached from our sub-continent, applies to our Ecuador. This paper lays much emphasizes on the Ecuadorian situation, in that, it stresses that the inequalities in Latin America is overwhelming as well. Thus, Brazil for example, invests a proportion of its GDP (Gross Domestic Product) which is ten times greater than that of Ecuador, Peru and Colombia. While there are specific nations that stand out, as it is the case with Brazil itself, Argentina, Mexico, Chile, Cuba and Costa Rica; and the remaining countries, including Ecuador, having almost marginal figures. Another work which precedes the present one entitled 'The Actors of Change in the Reinvention of the Ecuadorian University: the Strategic Role of Academic Staff in the Transformation of Higher Education in Ecuador'; also placed a special emphasis on 'Research and Teaching'. It is evident, among other things, that since CONUEP (the defunct National Council of Universities and Polytechnic Schools) presented in due course, the research work entitled 'The Assessment of the Current Situation and Prospects for the Short and Medium Term' in the 80s, it was obviously stated already that 'the serious situation presented by the research development of the Centers of Higher Education was inextricably linked to the structural problems of academic institutions' (Minteguiga, 2013). According to the data reported in this study, during the period between 1980 and 1988, 1,348 people undertook several research projects, of which 705 were advanced projects and 277 were concluded within the aforementioned period. In summary and with regards to the subject of the works that have preceded this present one, it is apparent that these studies were of good quality according to this important brief history.

II. DEVELOPMENT

A. Methods

A method is understood as a sequence of successive steps, leading to a goal or goals. The present work has been focused on formulating proposals aimed at solving, in the future, the current state of things of the scientific researches of Ecuadorian professors. Considering that this is the most appropriate method to deal with the problem (the poor level of scientific research of university teachers), since it is the path that leads to the achievement of the objectives. At the moment, 'some methods are common to many sciences, but each aspect of science has its own problems and therefore its own needs where it will be necessary to employ those modalities of the general methods more adequate to the solution of the specific problems' (Cerbero, 2017). It is important to note that, in terms of Scientific Research, 'method' means a set of processes that man must undertake during a research and demonstration of the truth. Moreover, the method is not invented since it depends on the object of the investigation itself. There are two types of methods, namely: the Scientific Method and the Rational Method. The first method involves the discovery of the reality of facts and, when discovered, must guide the researcher in regards to the use of the scientific method. In addition, the scientific method is based on systematic and methodical doubt, which should not be confused with the so-called 'Universal Doubt' of the skeptics. The scientific method takes on a general logic tacitly or explicitly well used. The rational method, in turn, applies to matters that do not constitute realities, facts or phenomena subject to experimental verification. Such is the case of a (rational) method that is used in Philosophy which, incidentally, does not have as a subject of study nonexistent fantasies, since it questions reality itself through abstract reasoning. Thus, it is opted as obvious, by the scientific method clarifying that which has been resorted to the logical method. Logic studies the various theoretical procedures and practices carried out for the acquisition of knowledge. For this purpose, it uses four general methods: deduction, induction, analysis and synthesis.

For some purposes, it is interesting to state the difference between deduction and induction, because only one of these two has been used during this work. The deductive method or reduction leads to the identification of a particularity from a generalization, by means of premises; that is, statements that must be valid. Thus, to obtain a valid conclusion, a demonstration of a case must be obtained. Induction as it is usually known is that process that leads to the conclusion of a generality from particular observations, hence, its strength is originated by evidence. Lukasiewicz showed that the method of induction was merely a case of reduction (Cadenas, 2010). From the transcript, it is considered that the inductive method has been used, given that; particular observations (the few scientific works that have existed in Ecuador by university teachers) have been made to arrive at a conclusion or generality.

But as it regards the methodology of scientific research, it is not a matter of using a single method in a strict sense; it must also be taken into account that, this method of observation has been used. But, the question now is what type of observation and for what is it used? The answer is very simple; the observation of the background and some situations, data and current statistics to plan future solutions. Regarding the current situation in Ecuador, the lack of research in universities highlights one of the most worrying, visible problems; and by the way, the reason why most of the universities were in the Category 'E'. Nevertheless, the Ecuadorian university, through different government agencies, is investing in the search for new ways to encourage scientific research in the country's higher education institutions (Campi, 2012). However, there are conflicting opinions which try to ensure that a standardized measure at the global level consists of a number of professionals who obtain postgraduate degrees, such as Masters in Sciences (M.Sc.) or Ph.D. in Philosophy (Ph.D.). These analysts show that the number is very high in Brazil, Colombia (5,000) and Venezuela (15,000) until a few years ago (when a crisis began in this country). Although in Ecuador the number hardly rises to 300, according to the data by the Foundation for Science and Technology of Ecuador. These analysts not so optimistic have pointed out that, scientific production is done through 16 indexed journals and the volume of statistical data represents 1% of the scientific information generated globally. In Ecuador, the number of magazines available is not so much a problem, but their survival. Most of them do not survive due to lack of support from scientists who can publish them. Therefore, as long as research is not a state policy, the emergence of a generation of researchers will not be achieved. Science must be developed in all fields of human endeavor as it is the case in humanitarian sciences, making science the conclusion to the well-being of man (Ruiz, 2017). This paper is intended to propose strategies for the implementation of scientific research in the University of Guayaquil which also applies to the entire university community of Ecuador. Therefore, Ecuadorian teachers must prepare themselves in terms of the Methodology of Scientific Research, for which the State and the universities themselves must allocate the necessary resources. When carrying out the academic activities in the classroom, they must provide the subjects to be discussed in advance, for the university students to advance their research based on the Scientific Research parameters that the teacher himself teaches. By so doing, teachers can get a feedback that benefits the students and the teacher who will always have something more to learn each day. It is also said that, the university teacher should make students aware that the application of processes and methods of Scientific Research should become a common way of proceeding within the teaching-learning process. For this objective to be achieved, it is necessary that the teacher himself is sufficiently prepared in the subject of the Methodology of Scientific Research. Another integral element of the strategy is constituted by the fact that the teaching staff of the Universidad de Guayaquil and all the higher educational centers of Ecuador are adequately prepared in the already crucial subject of the technologies to motivate their students to become involved in technological innovation.

In addition, there should be campaigns for the creation of university scientific councils in all the higher educational centers of the country to manage the scientific production of teachers and students, as well as carrying out diverse research. In this respect, the Universidad de Guayaquil already has the so-called DIPA (Directorate of Research and Academic Projects), although there is still a long way to go. Another element of the comprehensive strategy proposed is that the students manage their degree thesis in the cognizance of the relevant area and under the supervision of the teachers. Thus, the students would be enriched with the information collected by them themselves. In conclusion, it is necessary to encourage the participation of teachers and students in congresses, seminars, symposia, conferences and discussions at both national and international levels, to make known their own progress and to learn about the progress of other educational institutions.

B. Results

Based on the findings of other researchers like Field in 2003, as stated during the introduction and development of this paper, that although the Universidad de Guayaquil already has an interesting research program; the university community in general in Ecuador is still in its infancy when it comes to the implementation of programs that can place them in a scenario where the country becomes known at a national, regional and much less, global level. Likewise, they do not have adequate logistics and infrastructure to

accommodate all the immense amount of scientific research that is carried out abroad. As regard suggestions for new research possibilities this time, several proposals are formulated in a comprehensive approach which in the future may assist other Ecuadorian researchers to advance projects based on these proposals. At the moment, the results of the proposals that are implemented in the universities of Ecuador will be seen as they are developed. Thus, a new state of affairs would lead to new research based on the programs being structured. Within what is called the "Research Cycle", there are important factors that can come from two types of sources, one of them being the Empirical Sources: the observation of the researcher himself or the results of previous investigations of other researchers. Here is what has been done: research based on previous research. In the future, others will be able to carry out works based on the present investigation.

III. CONCLUSION

Scientific research, which is understood as a process of reflection, control and criticism that works from a system and intends to provide new facts, data, relations or laws in any field of scientific study is gradually developed in Ecuador, although there is still a long way to go. With regards to the Universidad de Guayaquil, there is a significant advancement in the Directorate of Research and Academic Projects (DIPA). However, there is much to be perfected. Regarding the implications of the present study and its relevance in the different areas of study, the current situation of scientific research in Ecuador is being unveiled, with the purpose of implementing urgent corrective measures for this country to be included, once and for all, in the world's scientific community. To such effect, it has formulated a strategy which, if implemented in reality by the University, will serve as a basis to future research; because the scientist should not seek to confirm the hypotheses but test them. An improper confirmation of the hypotheses may lead to biased investigations; Contrary to reliable research "(Docslide, 2015).

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