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**Conditions of Intellectual Production  
among Researchers from the  
Autonomous University of Tamaulipas**

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## **Conditions of Intellectual Production among Researchers from the Autonomous University of Tamaulipas**

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### **Abstract**

This article presents the results of a research project that started in 2010 with the collaboration of Mexican and foreign academics working on the area of higher education and scientific research. Based on the fact that the conditions of knowledge production have changed vertiginously (Gibbons et al., 1997), it is necessary to reformulate the theories that explain the new forms of academic production among researchers. To approach the analysis of the conditions of the academic production of researchers it is necessary to be aware of the new reality of the academic world which is characterized by new operation rules that give priority to the production of knowledge and impose conditions to universities and particularly to academics. The objective of this article is to offer an analysis of the conditions of the academic and scientific production of the researchers of the Autonomous University of Tamaulipas. This is a descriptive study that uses qualitative tools such as the in-depth interview, based on a significant non-probabilistic sample of the researchers that are part of Mexico's National Researchers System (SNI). The interview examined in particular the context of academic production and the challenges and problems faced by academics. The results show that the modes of production of researchers have transitioned from individual to group. In this regard Gibbons, et al. (1997) points out that in all types of knowledge production modes individual and group creativity exist in a changing relation of tension and equilibrium, which was also reflected by the results of the research study.

**Keywords:** Researchers, conditions of academic production, higher education

## **Introduction**

Present-day society is facing great changes, not only in terms of the social-historic tendencies that are currently addressed continually, such as globalization, the knowledge society, and the appearance of new information and communication technologies, but also in a look at the subjects in terms of the act of knowing and the ethics of its application to the solution of the problems that contemporary societies are experiencing.

It is necessary to begin with the recognition of a globalized reality in which knowledge plays a primordial role, which imposes conditions from the macro-level within the economies of countries, as well as at the micro-level, in the ambit of institutions and actors. At the same time, there is the priority of being aware that this very advance of knowledge has been marginalizing the countries that lack access to a research infrastructure that is associated with the formation of high-level human resources and a universal scientific education.

These changes have influenced the dynamic of evolution and transformation of universities, determined by the society and the economy sustained in the knowledge that they naturally create in terms of new stages of the exercise of the academic profession (Acosta, 2006). These facts divulge the incidence in the academics' tasks in a very significant and substantive manner, because their teaching and investigative functions are found to be dimensioned by novel forms of management that oblige the academics to find and act with other agents beyond those of the institutional scenario. The rapid production and circulation, added to the intensive use of the information and communication technologies, have propitiated and made it possible for academics to penetrate into the knowledge and exploration of investigative objects beyond those that they knew and in which they had a particular interest, thus exceeding the borders of the individual to the collective, from the intra- to the interinstitutional, and from the local to the global. With this, the conditions of the production of knowledge of the academics have changed vertiginously, as noted by Gibbons et al. (1997).

The importance of studying the academics of higher education has acquired such relevance that international organisms such as the World Bank (2002) and the Organization for Economic Cooperation and Development (OECD) (2007, 2008a, and 2008b), also have contributed to the study of this academic profession. This evidence allowed the emergence of a field of work related to academia in universities where academic thereof since become the object of attention and study. In this sense, the work of Philip G. Altbach (1994, 2004, 2006, and 2007) Tony Becher (2001) and Burton Clark (1984) have become global framework of this work for educational research.

## **Research**

Within the previously described context, meager investment is threatening scientific and technological activity at domestic and state levels, the scarcity of

researchers, and a growing diversification of the functions of academics at university institutions.

This derives from that Institutions of higher learning (IHL) have become the nucleus of the changes. Due to this, academics have been resolving their financial and administrative problems. In the face of this situation, public IHL have implemented strategies of evaluation to cover the indicators established in the policies and, at the same time, academics orient their work toward compliance with the production and performance indicators that dictate federal academic evaluation policies.

However, it is necessary to point out that evaluation indications deriving from Mexico's National Council of Science and Technology (CONACYT) and Professorial Improvement Program (PROMEP) apply a perspective for measuring production and academic performance without taking into account the qualitative aspects that intervene in some way that the professors perform their work.

Based on the latter, the question of the present investigation is, what are the conditions of intellectual production of researchers at the Autonomous University of Tamaulipas (UAT), with this seeking to analyze whether these conditions intervene in their productive activity.

#### *General Objective*

To analyze the conditions of intellectual production of the researchers at the Autonomous University of Tamaulipas.

#### *Specific Objectives*

- To describe the main academic activities carried out by researchers at the Autonomous University of Tamaulipas.
- To analyze the perception of the researchers on the policies and evaluation criteria with regard to the policies of academic productivity.
- To identify the benefits and consequences of adhering to the minimal parameters or requirements of the evaluation of the institution, of PROMEP and of Mexico's National Researchers System (SNI), from the perspective of UAT researchers.
- To analyze the strategies implemented by UAT researchers for the definition of the challenges and expectation of their academic production.
- To analyze the teacher-researcher transition process at the Autonomous University of Tamaulipas.
- To identify the strategies employed by researchers with the objective of achieving the evaluation requirements and policies established by SNI, PROMEP, and the Institution.
- To identify and analyze the characteristics that researchers present in the transition process from individual to collective work.

The work presents a qualitative, descriptive-type, design, exploratory in character, with interest in a specific phenomenon, and it is transversal type due to that its objective is the description, as complete as necessary, of the subjects that form part of investigation. What is important is that research carried out according to this design is performed only once and does not include the study of changes over time according to Warszawa (1978).

The basic design of the project entitled Conditions of the Intellectual Production of UAT Researchers consisted of the application of an in-depth interview as a strategy for obtaining the information required for this investigation.

Non-probabilistic samples can also be called directed samples, because the choice of the subjects or objects-of-study depends on the criteria of the researcher.

### *Sample Selection Criteria*

A group of individuals would be identified who present the following conditions:

- a) Membership in the SNI: This became the first variable, due to that we sought to obtain the opinion of academics recognized by the SNI and for these to furnish their opinions on the conditions through which they generate knowledge.
- b) We sought a selected group of academics who belong to different SNI evaluation levels (I, II, and III)
- c) Membership in the PROMEP Program: This was the second variable given that it is expected that the academics can indicate their opinion about the policies of this organism that defines the work of these academics at IHL.
- d) That the academics participate in the Teaching Personnel Performance Stimulus Program (ESDEPED).
- e) Gender: We sought academics of masculine as well those of feminine gender, assuming that the production conditions between one group and the other can be distinct.
- f) Knowledge generation lines: We selected academics that work in lines of knowledge generation of different disciplinary areas.

### **Frame of Reference**

#### *What is Productivity?*

To talk about productivity in its educative context, can result on first view, somewhat complex, due to the economic connotation of the term and because of its appearance as an educative term; however, on analyzing the term in its development and reach, some reflections can be made on technical bases deriving from knowledge that contribute to assigning yield and efficiency goals.

Productivity is the relation between the production obtained by a productive system and the sources utilized for obtaining this production. Consequently, productivity in education is the relationship between the quantitative and qualitative production of products and the human work employed in producing these (Valle, 2009).

According to this, it can be cited that the productivity of a researcher formerly measured by the number of works published and that comply with the demand of the institutions where the academics work or of SNI criteria. Productivity can be defined as the efficiency indicator that related with amount of the productivity utilized with the production obtained. As mentioned previously, productivity can be understood as an observed or as a latent variable. A latent variable is an intangible construct, not directly observable, and it can be measured only through specific indicators (Schreiber, Stage, King, Nora, & Barlow, 2006).

Thus, a researcher is productive if he/she is innovative, that is, capable of transforming the effective changes into something permanent or to integrate it into his/her institutional educative project or of his/her permanence in the SNI, with being dynamic being capable of implementing creative, imaginative, initiatives and to adapt these to his/her own context and natural educative climate and in which he/she gives classes.

Considering the educative policies with regard the characteristics of producing knowledge in what to the productivity of the academics of educative institutions and to what Gibbons (1997) denominates as Mode 2, a conceptualization immediately comes to the fore as to how to understand individual and collective, scientific, academic, and intellectual productivity, as well as the factors that have favored the latter.

### *Intellectual Production*

As Gallino states (1995: 543), “according to societies and epochs, intellectuals are an elite group, forming a stratum of persons whose main and distinctive occupation consists of diverse levels of creativity and depth, public diffusion, and the transmission from one generation to another in the elaboration of elements of the culture, above all immaterial, such as values, cognitive, moral, and esthetic categories, norms of conduct, thinking and acting techniques, in all of the spheres of social life and ideological forms”.

According to Pérez, Prieto, Quesada, & Castellanos (2012), the definition of intellectual production, operationally speaking, is employed for what intellectuals engage in, with regard to issues such as ideas, scientific publication, and transmission of the culture, always and whenever these have an impact on and a function in the society. Speaking of intellectual production allows us to position ourselves in the epistemic and methodologically process, not in the products.

Follari says (as quoted in Perez, Prieto Quesada & Castellanos, 2012) which has generally been called "intellectuals" to all those working within the production and dissemination of ideas.

Intellectual production historically has developed beyond the University, as mention Fromm, Neiburg & Plotkin (as cited in Perez, Prieto Quesada & Castellanos, 2012).

#### *Academic and Scientific Productivity*

González Brambila & Veloso (2005) cite that “today, the indicators that are used in general to academic and scientific measure production in the activities of researchers in education in any country are the following: the sum of articles published in specialized journals and the number of citations of these articles in other investigations. Additionally, and with regard to the theme of how to measure the importance of the contributions associated with Mexican researchers, it is noteworthy that these indicators serve for measuring the impact that their publications have on the international scientific community and provide an approximation of their quality. In this manner, these bibliometric indicators have become the most common way of measuring productivity, not only of individuals, but also of the institutions that compete for financing for projects, or even for recruiting and promoting other researchers” (p. 3).

In education, productivity is linked with the development of human resources, which obliges it to be conceived of as a special case in the planning of the human work potential. Thus, academic and scientific productivity in education must refer to the acquisition of abilities and skills that, accompanied by a certain investment, produces a high yield of human resources in the production of high social value satisfactions; moreover, educative productivity refers to the quality of education and to the process of the society per the amount of persons who benefit from it.

With such an acceptance, academic and scientific productivity presents as a combination of quantitative and qualitative indexes that permit the appreciation and analysis of the advance, development, and progress of any educational processes.

#### *The New Production of Knowledge*

According to Gibbons et al. (1997), at present novel ways of producing knowledge, arise on a daily basis. These forms will not be catalogued as good or poor. These forms of interacting or combining themselves with others cause an alteration at the moment of producing knowledge.

In order to establish the difference between the new ways of production in relation with the former way, we again take up Gibbons et al. (1997), who cite that throughout history, there have existed certain standards that tend to be recurrent. When the traditional modes of doing everyday things are modified, those that are participants in the hegemony and control of that task tend to describe the novel (the innovation) as something equivocal or erroneous; this occurs until the innovations are adopted and assumed by these same individuals to the point of the innovations being considered as their own, thus not being innovations henceforth. This is founded on the need to describe in the first instance on the new features in terms of the old, because on a hegemony



being dominant, any affirmation is judged taking this as a reference; nothing established as knowledge outside of the socially dominant form can be produced.

Gibbons et al. (1997) distinguish traditional knowledge as that granted the denomination of Mode 1, and the new knowledge production mode as Mode 2. In this manner, both modes conserve certain characteristics that differentiate them but both maintain a linked relationship.

## **Results**

### *Main Academic Activities Performed by Researchers at the Autonomous University of Tamaulipas*

Based on the information presented in the analysis of the results, it can be concluded that the activities that academics come to carry out as investigators of the institution coincide with the headings of the Mexican Ministry of Public Education (SEP), defined through PROMEP, with those defined by CONACYT by means of policies defined for entry into SNI and those defined in ESDEPED.

The results evidence that the researchers interviewed have complied with the requisites for belonging to some of the three previously referred systems. We also found that the activities currently performed by researchers who belong to SNI are oriented toward the publication of books, peer-review articles, and preferentially on articles in indexed journals, and the diffusion and divulgence of science. In order to remain in PROMEP, academics also slant their activities toward the publication of books and chapters in books. They afford great weight to participation in congresses through the presentation of learned paper, teaching, and to the development of tutoring and academic management. With regard to the institutional evaluation system (ESDEPED), they privilege the evaluation of activities related with teaching, an important part of which derives from evaluation by students of their professors. Thus, researchers are aware that better economic benefits can be accrued to the extent that they comply with the requisites of the three programs.

From this, it can be inferred that the academics and researchers who were the objects-of-study here are clear about the parameters that evaluate their investigative activity and their academic productivity in each of the three systems referred (PROMEP, SNI, and ESDEPED).

Similarly, from the perspective of the subjects investigated, insofar as the academics belong to the three programs, the better benefits that they will obtain in the substantive function of the University will reflect better benefits in substantive functions of the university (teaching, research, and the management and diffusion of knowledge). Therefore, it is possible to evidence that the researchers develop activities related with teaching, investigation (the production of knowledge, the formation of human resources, the development of research projects), the diffusion of knowledge (by means of academic events they attend or organize), and resource management.

These results permit us to recover some of the proposals of Gibbons et al. (1997), who consider that compliance with the norms or rules required by the investigative process are important for obtaining good results in their teaching activities and production.

In addition, these authors mention that Mode 1 of knowledge production is characterized by the definition of the cognitive and social norms that should be followed in the production, legitimation, and diffusion of knowledge of this type. Their cognitive and social norms determine what they consider significant problems, who can be allowed to practice science, and what constitutes good science, as aspect that would appear to be congruent with the results of the investigation when academics adhere to the norms and criteria defined by evaluation organisms of academic activity and investigative production.

Again, with reference to Pérez, Prieto, & Castellanos (2012), these authors mention that from the academic activities carried out by researchers of the University, these can be considered as “intellectuals” whose “intellectual production” generated through books, book chapters, and speeches, has a social impact on the institutional and interinstitutional community life in which they evolve.

#### *The Teacher-to-Researcher Transition Process at the Autonomous University of Tamaulipas*

Another key point is to identify and analyze the characteristics shown by researchers in the transition process of teaching work towards work related to research and knowledge management.

A global proposal on the part of a group of academics that are recognized by the SNI is the diminution of the teaching activity, which the group evidences on stating: “We continue to devote more time to research because, in order to balance all of the other activities, there is not sufficient time, it is more convenient for us to be more devoted to investigation and to publication”.

The proposal of the researchers contradicts that of the ESDEPED, whose objective is to strengthen the values inherent in teaching by means of a policy of differentiated stimuli, which allow full-time academics at IHL to consider teaching as a lifetime career. These stimuli are awarded to the full-time technician and professor who comply with the evaluation indicators of the program, the central axis of which is teaching.

This does not allow suppressing the hourly burden of the SNI researchers' teaching task. Analysis of the interviews reflected that the time devoted to teaching has not been omitted in its totality; the teaching hours assigned to researchers are accommodated into a continuous agenda and the remainder of the hourly burden is to be devoted to research, field work, and to the publication of articles and book chapters.

When the researchers were questioned about the number of hours devoted to investigation (projects, books, articles, consulting), the academics cited that they devote around 20 to 30 hours per week to this, weekends the most valuable time for work conditions without interruptions.

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The results of the investigation show strengthening in terms of peer academic bodies work and individual work. It also recognizes that the existence of these evaluation organisms has enabled, within the institution, promote and encourage the academic productivity of researchers.

The research demonstrated that a transition has arisen in the forms of the production of investigators, which ranges from individual to collective work. On this respect, Gibbons et al. (1997) state that in every type of knowledge production, individual and collective creativity are found in a varied relationship of tension and equilibrium, thus the coincidence of the results found in the present investigation.

The interviewees gave their opinions on the difficulty represented by the process of conciliating individual and collective work, and they underscored the lack of equilibrium under work conditions related with infrastructure, spaces, and times of coincidence, even interest. Researchers who were the objects-of-study cited that while they work with researchers inside their own institutions, they also conduct work outside of the institution with researchers from different educative institutions. However, this type of activity to be registered not formalized in organizations such as the PROMEP academic networks is considered individually into the University because the product of its activity has not co-authored by researchers from the same educational institution.

This is what has rendered difficulty the attention to the requirements established by the ESDEPED or the SNI, which require a determined number of projects and peer-reviewed academic publications. Confronted by this situation, some researchers have sacrificed the possibility of working collectively in order to conserve their naming to the SNI.

In addition to the above, the fact is highlighted that researchers have had to detour to a certain degree the work interest in favor of a particular investigative line, this the product of the application of policies emanating from PROMEP. On promoting collective work, researchers have had the need to make up work groups of with an academic trajectory and lines of generation that are not always related. Likewise, it was evidenced that some investigation lines have also been modified with the purpose of integrating into these activities carried out by researchers who have been incorporated into academic groups carry out with a certain investigative trajectory

Current knowledge and analysis of the new conditions of intellectual production of UAT researchers, in definition of policies and strategies on academic work, was based on the actual conditions under which UAT researchers are currently working.

The researchers' intellectual production conditions that form part of the study reflect that there have been favorable and significant changes. In this regard, they mentioned that the researchers are remunerated through the academic stimuli granted by ESDEPED, and they establish that at present, they have more support and more resources to be able to carry out more

investigative work. At the same time, they argue that while they have economic benefits, the exigency is academically greater. A strategy of linking professors, investigation, and the formation of human resources and tutorials has consisted of incorporating students into research projects, matching the interest of the student with those of the researchers themselves, degree-related thesis management tutoring, permitting with this the combining of production, investigation, teaching and academic tutoring.

The proposals coincide [Guzmán, personal communication] when she cites that the conditions of knowledge production have changed vertiginously, as well as the characterization of the mode of producing knowledge presented by Gibbons (1997). This allows us to highlight the importance of understanding and analyzing the new forms of the intellectual production of academics. The manner in which this author described the attributes of knowledge production as passing from individuality to collective work with other researchers and students to the heterogeneity of investigative groups and the forms and spaces of the work of these.

However, it can be observed that these work conditions for academics, cause lags in the investigative trajectory.

## **Conclusion**

The results of the investigation and the literature reviewed denote the interest that has been causing this issue both internationally and nationally. On this respect, [Guzmán & Limón, personal communication] mentioned that knowing the impact that PROMEP policies have on full-time professors is in itself the analysis of the effectiveness of a policy-driven instrument of the thrust of the quality of education. The authors recognize that at 17 years of PROMEP operation, it continues to lack the assessment results of the impact of the program on the institutional ambit. However, this investigation does provide assessment elements on the evaluation indications of this program and on the way that this is becoming integrated with the evaluation indicators implemented by the ESDEPED Program and the SNI.

The results of the present investigation supply elements for decision making and for action development or for pertinent strategies for driving a culture of better production under better conditions for obtaining better results, such as the following:

- To generate institutional policies to improve knowledge production conditions (balanced distribution of time periods, time planning, infrastructure, equipment) so that the final products have a greater impact on the generation of knowledge, that comprise the norm for future projects and for decision making in policy matters and in actions related with the development of intellectual production and the academic career.

- To support a greater number of professors in facilitating their incorporation into evaluation systems such as their becoming PROMEP and SNI members, because in both of these, professors have been permitted to devote themselves to academic work as their main activity, and improving their work conditions, achieving better professional development.

Designing the interview guideline instrument allowed the generation of categories, variables, and indicators for the design of an instrument that includes a greater population and that can be a picture of what occurs in researchers at the UAT. And that clearly and accurately shows the context of production in which the academic develop their investigations and theories through opinions that reflect in certain ways the forms of work, activities, strategies, and challenges that apply and that are proposed at the short and long terms, as well as the opinions that entertain a relationship with the evaluative instances that assess their investigations.

Finally, the generation of institutional strategies is suggested that guide the provision of incentives for the participation of academic and researchers for attending to, in convened fashion, evaluative policies concerned with the type of work that the researchers perform, seeing to their needs and investigative interests, work conditions, (infrastructure, equipment), support for academic and administrative management, conciliating the conformation of work teams so that this type of collective activity is effected in an effective and productive manner.

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