



INTEGRAL EVALUATION OF THE TEACHERS OF THE POLYTECHNIC SCHOOL OF CHIMBORAZO, ECUADOR.

FABIAN ERNESTO ARIAS ARIAS

Facultad de Ciencias, Escuela Superior Politécnica de Chimborazo (ESPOCH), 060155, Riobamba, Ecuador
ITECA-Instituto de Tecnologías y Ciencias Avanzadas, Villarroel y Larrea, 060104, Riobamba, Ecuador

fabian.arias@iteca.ec

Summary

The lack of a comprehensive system of evaluation of teachers in the Polytechnic School of Chimborazo, Ecuador, has produced an absence of parameters that allow evaluating the academic performance of university teachers, in the fields of teaching, research, linkage with the community and university management, contemplated in the Regulation of Teaching Evaluation for Higher Education Institutions, proposed by the National Council for Evaluation and Accreditation of Higher Education of Ecuador (CONEA). This research project is aimed at characterizing the academic performance of the professors of the School of Biochemistry and Pharmacy of the Faculty of Chemical Sciences of the Polytechnic School of Chimborazo, through a comprehensive evaluation. At first, it was proposed to analyze the teaching evaluation carried out in 2020 and 2022 in the School of Biochemistry and Pharmacy and, then, in a second moment, to design and apply new instruments aimed at self-evaluation, co-evaluation and heteroevaluation, within the framework of a proposal for comprehensive teacher evaluation. After carrying out the analysis of the results of the evaluation, it will be possible to identify the characteristics of the integral academic performance of the teaching staff, information that will serve the School to promote the improvement of the educational and research process.

Keywords: *Comprehensive evaluation/teachers/School. Biochemistry and Pharmacy/ -University of Cuenca, Ecuador.*

INTRODUCTION

For some years, a new world has been taking shape, with it a new world order, an event that is called globalization, and as Lanni points out quoted by Edmundo Granda: 2 "Little by little the world becomes big and small, homogeneous and plural, compound and multiform. Simultaneously with globalization, reference points are dispersed, giving the impression that they move, float, are lost." And Granda conceptualizes globalization as "the processes by virtue of which sovereign national states intermingle and interweave through transnational actors and their respective probabilities of power, orientations, identities and various networks." 2 Globalization has influenced all aspects of the world's societies: economy, politics, technology, culture and within it art, education and social.

The link between globalization and education is carried out from the development of electronics, computing and informatics. The computer revolution has offered an ideal instrument for the universalization of knowledge, but which, at the same time, has features of previous times, since not everyone has access and can enter this process, since there is economic and technological heterogeneity in the world.

Higher education in the third world is pressured by the urgency of change so as not to be left out of the globalization process and, therefore, marginalized from knowledge; It is then obliged to follow trends imposed by a set of political, scientific, technological, economic, social and ideological-cultural factors. 3,4

Within the change of higher education, in the last 10 years of the last century, the Latin American university was not prepared for the leap it was going to take: the massification of higher education; it lacked infrastructure, human and, especially, economic resources to successfully face the new challenges and demands, since enrolments had increased, as can be seen in Table 1.

TABLE 1. Evolution of University Enrolment in Latin America Between 1950 And 2000

YEARS	STUDENTS
1950	267.000
1970	1.640.000
1980	4.930.000
1990	7.353.000
2000	9.550.000

In the decade from the 70s to the 80s, the increase in university enrollment tripled, from the 80s to the 90s, it multiplied by 1.5 and from 90 to 2000, the increase was 1.3 times more. It is in this decade that many Latin American countries applied evaluation systems in higher education, a period called by Días Sorbrinho, the "decade of evaluation"; In these countries, reforms were accompanied by legal changes; In contrast to this process, another group of countries did not make or advance reforms or legal changes. 6 Therefore, they must at the same time face accumulated tensions and overcome irrationalities of the previous model, 7 as is the case of resistance to evaluation; Without evaluation it becomes very difficult to make any transformation. In this second group is Ecuador.

DEVELOPMENT

The concern for the evaluation and accreditation of higher education institutions is recent in Ecuador and so one of the most significant processes of the Ecuadorian university in the 90s, was the opening to the acceptance of social accountability, evaluation and accreditation of Higher Education Institutions; this social requirement is reflected in the Political Constitution of the Republic in force, Article 79 and promulgated in the Law on Higher Education, approved by Law No. 1, published in Official Gazette No. 77 on 15 May 2000; Article 90 states: "The National System for Evaluation and Accreditation of Higher Education is established, which will operate autonomously and independently, in coordination with CONESUP. The System, which will integrate institutional self-evaluation, external evaluation and accreditation, must be incorporated in a mandatory manner by universities, polytechnic schools and higher technical and technological institutes in the country." 8 The evaluation processes in the Institutions of Higher Education are mandatory, as established by the Constitution of the Republic and the Law of Higher Education (LES), since "the function of any evaluation process is aimed at improving the quality of education and in it that of its teachers, therefore the absence of teacher evaluation programs has been, one of the factors that has significantly influenced education in the country." 9

The Ecuadorian university has the decision to initiate processes of change, aimed at improving the quality of higher education. The National Council for Evaluation and Accreditation (CONEA) has proposed this year, the Regulation of teaching evaluation for Higher Education Institutions; 10 but this should not only be the result of institutional resolutions, it must be put into practice, and accepting Article 53 of the LES that stipulates: "The professors of the centers of higher education will be evaluated annually in their work and academic performance. In the regulations for teacher evaluation, which will be issued by CONESUP based on a proposal from the National Council for Evaluation and Accreditation, the evaluation criteria, the forms of student participation will be established...", 8the evaluation becomes unpostponable.

In the Statute of the University of Cuenca, 11 issued in October 2003, in its Title I, Of the Constitution, purposes and government, Chapter I, Of the Constitution and the purposes, article 2, literal f stipulates: "Establish the adequate evaluation and accreditation of its activities as a permanent process of accountability to society and review of processes and the university structure, to adapt it to changing scientific and social demands."

The improvement of the quality of higher education can be achieved if the situation of our teachers is first known, for this it is necessary to characterize and evaluate the academic performance of each professor.



Despite the fact that the regulation of teaching evaluation of CONEA is not yet in force and that the University of Cuenca lacks internal regulations, the Directorate of the School of Biochemistry and Pharmacy has twice applied a questionnaire of co-evaluation of teaching performance by students, which has served as the basis for this work and therefore, Based on internal experience, a comprehensive teacher evaluation is proposed, based on the evaluation standards of the Regulation proposed by CONEA.

The problematic situation that motivates the present study lies in the lack of a comprehensive evaluation system for university professors of the School of Biochemistry and Pharmacy, and the absence in the internal regulations of the Faculty of Chemical Sciences, approved in June 2004, 12 by an evaluation commission. This reality determines the lack of parameters that allow characterizing the academic performance of professors for the issuance of value judgments related to teaching, research, connection with the community and university management, which justify in the future to adequately promote improvements in academic performance.

This, in accordance with the functions that characterize higher education, constitutes a set of activities that is defined from the following points of view:

- a) The training of students as professionals for service and social transformation.
- b) Research as the axis and sustenance of the construction of knowledge for the benefit of the educational process, and the transformation of social problems.
- c) The social projection of the university, understood as a link with the community, aimed at responding timely and effectively to their demands. 1
- d) University management, to direct and coordinate the tasks of university work such as programming, execution and evaluation.

Thus, university academic activity articulates, synthesizes and operationalizes the university functions "to which the teacher acquires an integral or integrative commitment". 13

The object of study of this research has been the evaluation of the integral academic performance of the professors of the Polytechnic School of Chimborazo. It includes the analysis of the teacher evaluation system applied in 2020 and 2022, and the perspective of a new approach and application of academic evaluation in a holistic sense, which includes teaching, research, linkage with the community and management.

BACKGROUND

The social changes of the last decades in the world were manifested, among other expressions, also as demands for change to higher education, which meant reforms, which in most advanced countries occurred in the 70s and 80s, and in many Latin American countries in the 90s. The reforms responded to the pressures of the process of economic globalization, and the Latin American countries that first began their changes in higher education were those with greater demands to enter this process, such as Chile in the 80s, Mexico and the MERCOSUR countries in the 90s.

The following is an overview of the background and evaluation policies of three Latin American countries. Cuba has been selected for being a pioneer and having systematized the evaluation; Chile for being one of the first countries in South America, and Colombia, for being a country bordering Ecuador, with similar problems in the region.

The Cuba Case

One of the countries that has implemented the evaluation of higher education in a systematic manner has been Cuba, which, due to the political will that has characterized the different levels of government and the commitment to the development of higher education, has guaranteed a legal framework to promote the continuous improvement of the quality of higher education and its impact on Cuban society.

Since the creation of the Ministry of Higher Education (MES) in 1976, the concern for quality has been present and systematically strengthened. In the last 5 years it has acquired new dimensions to measure and compare its level with the advanced higher education of the world, based on regional and international quality standards. To this end, it has the Control, Evaluation and Accreditation



System, consisting of three subsystems: State Control, Institutional Evaluation and Program Accreditation.

The Institutional Evaluation carried out by the Ministry of Higher Education in Cuba since 1978 has been perfected and adapted according to the level of development achieved by higher education institutions as well as that achieved in the established measurement and control methods.

So far there have been 4 versions of the Institutional Evaluation Regulation of the Ministry of Higher Education, in 1978, 1982, 1990 and 1997, and always in correspondence with the level of development achieved, each of them more demanding than the previous one.

The evaluation system has two modalities: internal and external evaluation. For internal evaluation, each institution has its own self-evaluation system, but in general they are governed by the current Institutional Evaluation Regulation. External evaluation is carried out by the Ministry of Higher Education. It is a form of state control and it is based on what is legislated in the current Institutional Evaluation Regulation.

The general idea that sustains the subsystems of Institutional Evaluation and Accreditation is that self-evaluation, evaluation and accreditation make up a unit, and are moments of a unique process that is observed as a continuous improvement of the quality of higher education, and public certification of quality levels. If the results of the self-evaluation of a program have reached a qualification that advises accreditation, this is proposed. The evaluation on the other hand is of a cyclical nature in which self-evaluation - improvement plan - evaluation - final opinion - self-evaluation is applied.

Currently, the National Accreditation Board (JAN) promotes, executes and controls the accreditation policy adopted, and coordinates the different processes of evaluation of institutions and accreditation of higher education programs in Cuba. It represents Cuban higher education in matters of quality, evaluation and accreditation before quality agencies, institutions and organizations. It grants the different categories of accreditation and the assessment of the different institutional evaluations.

The institutional evaluation contemplates two stages, the self-evaluation and the external evaluation, in addition it has different organizational levels: the Teaching Department, the Faculty, the Research Center or Study Center and the Institution of higher education. The Teaching Department is the fundamental cell for the direction of the educational teaching process, where you can see more directly the integration of the activities of the higher educational process such as training, research and extension. The evaluation design considers that the fundamental variables to be evaluated are: educational work, human resources, performance of scientific work, performance in training, infrastructure and financing, collaboration and social impact and relevance. One of the main points of the institutional evaluation process is that it is carried out every 2 years and its programming is defined by the Rector of the Higher Education Institution.

The success of the evaluation and accreditation process in Cuba is that it starts from the evaluation of the fundamental cells of the educational process as the teaching departments were called. Another aspect that has contributed to the success is the use of the experience accumulated in evaluation and accreditation during the 93 evaluations carried out from 1978 to date. 14

All the above, in addition to the efficient and effective use of resources -despite its economic situation- and the increase in university management in the search for the most diverse ways of financing for its sustainable development, has made higher education in Cuba at the highest international levels.

The Chile Case

The process of regulation and transformation of higher education in Chile began in 1980, because in the period from 80 to 90 there was a very noticeable increase in the number and type of higher education institutions, and from 1990 begins the stage around quality assurance with a view to accreditation, Thus, in March of the same year, the Constitutional Organic Law on Education (LOCE) was issued, which provided that all private institutions, created since 1981, had to undergo a licensing process, referred to in this law as accreditation; This process involves the application of self-evaluation and external evaluation of the institutions with a follow-up of 6 years, in order to then



access accreditation. Currently, a comprehensive quality assurance system is being legalized to improve the quality and equity of higher education through public assurance of compliance with requirements and standards based on self-evaluation, planning and monitoring mechanisms to ensure the necessary quality.

"The process that has taken place is actually a collective enterprise, which is still in the development stage. It is necessary to maintain this way of working, participatory and open to the adjustments and changes that are permanently necessary to be able to successfully address the challenges indicated and the many others that will become evident over time. It seems to be the only way to ensure the relevance and updating of the processes applied in an area of such relevance as the quality of higher education." 15

Chile has prioritized accreditation, so in 1999 a pilot plan was developed for the accreditation of careers and programs of autonomous institutions. Throughout this process, successive consensuses have been reached, privileging the development of experimental applications rather than the legal establishment of regulatory mechanisms. As in the case of Cuba, the experience has been enriching as feedback and has allowed to refine some specific aspects that will serve for the definitive design of a legal framework for an appropriate system according to the characteristics and vision of the country, in which government authorities, institutions, students, representatives of professional associations have participated, employees, users of professional services, as well as national and international experts.

The Colombia Case

From Law 30 of 1992, the National Accreditation System (SNA) is created in order to ensure that higher education institutions meet the highest quality requirements in the educational service they provide and carry out their purposes and objectives. Accreditation in Colombia has promoted an effective culture of institutional self-evaluation, which leads to continuous improvement and has allowed to revitalize the role of the mission and project of each institution. In addition, accreditation as an institutional phenomenon extends the coverage of self-evaluation, motivating a general analytical assessment, greater commitment to the relevance of the studies and the qualification of the teaching staff, their teaching practice and intervention in research.

Self-evaluation for accreditation purposes has generated, in addition to the collaboration of faculty associations, the development of important works of academic reflection, curricular reforms and approaches to strategies for interdisciplinary treatments, the formation of research groups and the strengthening of formative research.

The institutions that participate in the National Accreditation System have adopted the policy of accountability and transparency in their processes, with autonomy, it is not a correctional and interventionist model. "The achievements of the last eight years are evident, however the System will still have to face various risks and threats. The survival of accreditation in Colombia will depend on the leading role of the institutions themselves, to whom the legitimacy of the system is due. Governments will be able to support their development by establishing policies, incentives and rules of the game; But the future of accreditation is in the hands of the same academic community that devised it as an ideal mechanism for the full fulfillment of its mission." 16

The Ecuador Case

In the last 12 years, evaluation and/or accreditation systems were applied at the national level in several Latin American countries, accompanied by legal changes, but in other countries neither reforms nor legal changes were made. 6 Ecuador was in the latter group until 2000; The evaluation and accreditation policy was born when the Higher Education Law was issued, 8 in which, in its Chapter VI: Of the government of the Institutions of the National System of Higher Education, in its Article 29 establishes: "The collegiate bodies of the higher education centers that will be formed in a mandatory manner will be the Internal Evaluation Commission and the Commission of Liaison with the Collectivity, whose purposes, organization, integration, powers and duties shall be regulated by the Statute, in accordance with this Law."

According to a study on the situation of higher education institutions in Ecuador carried out by CONEA, in September 2003, 17 29.4% of institutions have not complied with Article 29 of the SLE, in the scope



of the evaluation carried out, most have directed it only towards teaching performance. Among the general projections of CONEA is to contribute to achieving significant improvements in the academic quality of higher education institutions in accordance with the vision, mission and institutional plan of each of them. In addition, at the institutional level, CONEA has proposed some activities, among which is to encourage and promote at the national level the development of a culture of evaluation and accreditation, through systematic and permanent activities.

For its part, the University of Cuenca, in its Statute, Title III, Of the executive administration and support agencies, in Chapter VI, of the Internal Evaluation Commission, in Article 43, stipulates that the attributions of this commission are: literal b): "plan and execute academic self-evaluation of the University, in coordination with the National Council of Evaluation and Accreditation.", literal c): "Promote the culture of evaluation at all academic levels of the University" and in literal f): "Promote the improvement and updating of academic and administrative staff, using, among other means, evaluation." And in Title IV Of the members of the University, Chapter I Of the academic staff, Article 45, it is stated that: "... Professors will be evaluated annually, in their work, academic performance, in accordance with the corresponding regulated standards, which will establish the evaluation criteria, the forms of student participation in the evaluation process, the academic and economic incentives and the limitations to the guarantee of stability. 11

It is evident that the University aims to achieve a level of quality in accordance with international standards, for which it is essential to start a comprehensive evaluation process within each school and faculty. This topic has been arousing increasing interest in our country, in our university and, in particular, in our school.

In view of the importance of evaluation in educational activity, the Academic Council of the School of Biochemistry and Pharmacy and the Board of the Student Association, aware that education requires a continuous process of scientific, technical and pedagogical updating of teachers and that such preparation must be reflected in educational activity, It has considered evaluation as an important part of this process. 18

The process of teacher evaluation in our School began in 2003, when after three teaching assemblies it was unanimously resolved to apply teacher evaluation, in order to know the reality regarding the performance of teachers and motivate them to improve their academic preparation or their relationship with students to improve the teaching-learning process. By means of minutes of the Academic Council and the Board of Directors of the Faculty, the questionnaire for the evaluation of the teaching performance by the students was approved, which included questions aimed at determining programs and knowledge, methodology, attitude of the professor, evaluation, bibliography and resources, and suggestions by the students. 18

In the School of Biochemistry and Pharmacy, evaluation of teaching performance has been carried out in a single guideline, co-evaluation by students, in the years 2003 and 2004. The results of the July 2003 evaluation were very fruitful; Thus, the School Management concludes that "the contribution of students in higher education is valuable in this process, although it is questioned by some teachers, the competence of most of them cannot be doubted and there is no denying that they are the most indicated to comment on the activity of the teacher". 18 These results mark a starting point for further work that must be applied to obtain information closer to reality.

In July 2004, a new evaluation was made with some modifications, and the following conclusions were obtained: From all the values obtained in the questions that have been valued on 5 points, an average has been calculated for each teacher and when analyzing these data, we obtain the following results: 17 teachers obtain a value between 4.5 and 5, 26 teachers a value of 4 to 4.5 and 5 teachers a value between 3.5 and 4. 89% of teachers have a rating from Very Good to Excellent, and only 11% (5 teachers) have a rating of Good. "From the analysis of the results we can conclude that the activity of the Teachers of the School, is positive, in all aspects and it will be very necessary for each teacher to carefully examine the result of their own evaluation,..." . " As it is already known the evaluation is part of the educational process and as such requires to be reviewed, updated and optimized, that is the idea proposed by the Academic Council of the School of Biochemistry and Pharmacy, who argue that the evaluation should be continuous ..." 19



The proposal to carry out a comprehensive teaching evaluation will make it possible to characterize academic performance not only in the field of teaching, but in other areas of university work.

The legal framework of higher education in Ecuador considers evaluation to be a mandatory process. The LES, in its Article 90, states: "The National System of Evaluation and Accreditation of Higher Education is established, which will operate autonomously and independently, in coordination with CONESUP. The System, which will integrate institutional self-evaluation, external evaluation and accreditation, must be incorporated in a mandatory manner by universities, polytechnic schools and higher technical and technological institutes in the country." The law further stipulates in Article 53 that: "Professors of higher education institutions shall be evaluated annually on their work and academic performance. In the teacher evaluation regulations, which will be issued by CONESUP based on a proposal from the National Council for Evaluation and Accreditation,..." 8

The CONEA has sent to the University of Cuenca a proposal for a Regulation of teaching evaluation, 10 in which it has the following objectives:

- (a) Improve the quality of work and academic performance; and, consequently, the quality of services offered by higher education institutions.
- b) Provide teachers with information on the perception that the academic community, and especially students, have of their performance, to provide feedback on academic processes.
- c) Identify achievements and academic difficulties of teachers, in accordance with the institutional mission.
- (d) To contribute to the permanent updating of knowledge and the pedagogical training of teachers.
- e) Provide institutions with tools for decision-making related to the planning of activities of their academic staff.
- f) Guarantee the stability and promotion of suitable academic staff.
- g) Promote the culture of evaluation in an environment of interaction between actors who exercise academic freedom with responsibility. 10

FINAL CONSIDERATIONS


The evaluation that has been made so far in the Polytechnic School of Chimborazo has been in a single guideline, in order to characterize the teaching performance. However, in order to analyse the comprehensive academic performance of university professors, it is necessary to evaluate other areas such as research, links with the community and university management. That is why the evaluation carried out is insufficient, since the teacher evaluation within the educational process would be incomplete without the inclusion of the impacts in the different areas of their academic, social, personal and institutional action.

This proposed evaluation route must lead to reinforcing everything that generates positive impact and reviewing everything that stops and hinders the progress of education. It is also important the active, critical and constructive participation of all members of the educational process, since education is the task of all, teachers, students, managers and authorities. 13

Characterizing the academic performance of the teachers of the Polytechnic School of Chimborazo through a comprehensive teacher evaluation will undoubtedly favor the educational process. A system of comprehensive teacher evaluation will improve the academic performance of teachers, in addition to assessing it from a global vision of the teaching, research, link with the community and university management, including values and attitudes that have to do with the subjective dimension. In view of the above, the evaluation process should be implemented as soon as possible and it is pertinent that it have a comprehensive approach. It is also feasible to do so, because all the actors of the educational process, authorities, directors, teachers and students, are aware of the need for comprehensive evaluation as an input for a future intervention and find ways of solving to improve the quality of higher education.

REFERENCES

- [1] Santos Guerra MA. "Educational Evaluation 1. A process of dialogue, understanding and improvement." Educational Answers Collection. Argentine Republic: Editorial Magisterio del Río de la Plata; 1996.

- 
- [2] Granda E. Health: Globalization of life and solidarity (summary). *Saúde in Debate*. Rio de Janeiro, Set.-Dez . 2000;24(56):83-101.
- [3] Fabelo Corzo JR. Epistemological Challenges for an Alternative Globalization. *Contracorriente Magazine*. Havana. N° 4, Year 1, 2001.
- [4] Globalization, Neoliberalism and Education. Course of Pedagogy and Management. Series of Documents of the Higher Diploma in Health Sciences. Basin. Sept-Oct 2004, p.1-6.
- [5] Léméz R. Quality assurance programme, academic mobility and transnational higher education. Montevideo, April 2002. CONEA magnetic file. May 2004, p. 5-6.
- [6] García Guadilla C. Balance of the 90s and reflections on the new forces of change in higher education. *Universities in Latin America: Reformed or Altered? Venezuela*, p.17-37.
- [7] HR Kells. National Evaluation Systems in Latin America. *University Thinking*. Buenos Aires. Year 6, N° 7. 1998.
- [8] Higher Education Act. Year 1, Official Register N°77. Document. Quito. 15 May 2000.
- [9] Guevara Toledo C, Moscoso AW. Teaching evaluation system at the Salesian Polytechnic University in the light of Preventivity and Potentialization. Salesian Polytechnic University, Sangolquí. 2000.
- [10] Proposal for a Regulation on Teaching Evaluation for Higher Education Institutions. Document CONEA. Guayaquil. Aug 25 2004.
- [11] Statute of the University of Cuenca. Document. Basin. October 2003.
- [12] Internal Regulations of the Faculty of Chemical Sciences. Document. University of Cuenca. Basin. June 28 2004.
- [13] Achig L, Dutan H, Eskola G, Loyola C, Mendoza E, Vazquez P, Velez C. Conceptual aspects of the evaluation of the work of the university professor. Educational Research Program. University of Cuenca, Seminar - National Workshop "Evaluation of the university teacher". Basin. April 1995, p . 19-32.
- [14] Study on the background, current situation and perspectives of evaluation and accreditation in the Republic of Cuba. Havana, March 2003. Series of technical documents, CONEA magnetic archive. May 2004, p.1-41.
- [15] Background, current situation and perspectives of the evaluation and accreditation of higher education in Chile. Study for UNESCO. Santiago. February 2003. Series of technical documents, CONEA magnetic archive. May 2004, p. 1-36.
- [16] Roa Varelo A. Accreditation and quality assessment in Colombian higher education, member of the National Accreditation Council. May, 2003. Series of technical documents. CONEA magnetic file. May 2004, p. 1-67.
- [17] National Council for Evaluation and Accreditation. Series of technical documents. CONEA magnetic file. Sept 2003.
- [18] Chérrez Verdugo G. Teaching Evaluation of the School of Biochemistry and Pharmacy. *Journal Faculty of Chemical Sciences, University of Cuenca*. Feb 2004;(3):47-51 ISSN 13901869.
- [19] Chérrez VG. Director of the School of Biochemistry and Pharmacy, Faculty of Chemical Sciences, University of Cuenca. Report of the evaluation to the teachers by the students (Cycle Mar-Aug 2004). In print.