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## **Regional Development through Continual Improvement of Higher Education in Latin American Countries Case Study**

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### **Abstract**

Aiming to promote the social mission of higher education and their integration in Latin American countries, this research has a qualitative focus and it has the objective to study the normative context and the main theoretical references for the assurance of the quality of higher education for Colombia and Ecuador, examines how the continuous improvement of higher education contributes to regional development; and proposes methodological strategies that contribute to the purpose for the regional development, in a systemic, objective, measurable and achievable in time way, like are the process management and the balanced score card for University Management Strategies and to built a public policy for Latin American Universities.

**Keywords:** University Management, Quality Assurance, Public Policies, Fundamental University Management Strategies.

## **Introduction**

The Final Report of the World Conference on Higher Education in the 21st Century, Vision and Action, highlights the capacity of higher education to "transform and promote change and the progress of society" (UNESCO, 1998, p.20). Consequently, countries with their national governments and their higher education institutions work to fulfill this global purpose, by improving quality.

The problem of research is posed with the following question based on an analysis of the current literature and trends that allow us identify 'the problem'. Thus it is prudent to pose the following research question: What methodological strategies contribute to the continuous improvement of the quality of higher education, as a contribution to regional development?

And as a research hypothesis at this stage it can be inferred that the methodological tools of the quality assurance of higher education contribute directly to regional development.

Taking all this into account, the general objective of the research is to analyze and propose methodological strategies for the continuous improvement of the quality of higher education, as a contribution to regional development. The specific objectives are: to analyze the normative and conceptual context of the assurance of the quality of higher education for Colombia and Ecuador; and to formulate methodological strategies to continually improve the quality of higher education and its contribution to regional development.

The paper firstly examines a theoretical framework. In doing this, the research contributes to the development of a conceptual framework allowing us to explain why those methodological strategies improve the quality of higher education. Following this, the research will develop a study that allow to the universities have a management model according to the social requirements through the development international cooperation strategies between universities in Latin America and Europe.

## **Theoretical Framework**

### **Conceptual Framework**

The main concepts analyzed in this research, which are directly interrelated, are described below; giving special importance to the fact that the current theoretical and normative approaches in Colombia, Ecuador, and the world, for continuous improvement and the assurance of quality, are based on principles that must be adopted by the leading human talent and ascribed to the institutions of higher education to be successful in this process it is evident that the failure to achieve the purposes of quality assurance, is due to the absence or weak application of one or more of the following principles:

## **Principles of Higher Education in Colombia.**

Law 30 of 1992 defines the following principles of the public service of Higher Education in Colombia, (Congreso de la República de Colombia, 1992, p.1). Article 1 Higher Education is a permanent process that enables the development of the potential of the human being in an integral manner, is carried out after secondary or secondary education and aims at the full development of students and their academic or academic training. Professional. Article 2 Higher Education is a public cultural service, inherent to the social purpose of the State. Article 3 The State, in accordance with the Political Constitution of Colombia and with this Law, guarantees university autonomy and ensures the quality of the educational service through the exercise of the supreme inspection and surveillance of Higher Education. Article 4 Higher Education, without prejudice to the specific purposes of each field of knowledge, will awaken in the students a reflective spirit, oriented towards the achievement of personal autonomy, in a framework of freedom of thought and ideological pluralism that takes into account the universality of knowledge and the particularity of the cultural forms existing in the country. Therefore, Higher Education will be developed within a framework of freedom of teaching, learning, research and teaching. Article 5 Higher education will be accessible to those who demonstrate that they possess the required skills and meet the academic conditions required in each case.

## **Valorative Principles of the National Accreditation Council (Consejo Nacional De Acreditación, 2013b, P. 9)**

- Universality
- Integrity
- Equity
- Responsibility
- Coherence
- Transparency
- Relevance
- Efficiency
- Sustainability

## **Principles of Quality - International Standards Iso 9000 (Organización Internacional de Normalización -ISO-, 2015a, pp. 3-10).**

- Focus on the client
- Leadership
- Commitment of the people

- Focus on processes
- Improvement
- Decision making based on evidence
- Relationship management

### **Principles of the Higher Education System (Presidencia de la República de Ecuador, 2010, p. 7)**

Art. 12.- Principles of the System.- The Higher Education System will be governed by the principles of responsible autonomy, co-government, equality of opportunities, quality, relevance, integrality and self-determination for the production of thought and knowledge within the framework of the dialogue of knowledge, universal thinking and global technological scientific production.

### **Regional Development**

According to Javier Delgadillo Macias (Delgadillo, 2001, p.1), "Regional development is a concept inherent in the transformation of the regions. A process and an end in the tasks of administration and promotion of the growth and welfare of the country. As a concept, it refers to a process of qualitative and quantitative changes at the economic, political, social, environmental, technological and territorial levels that take place within the political-administrative units of the territory. "

In this paper, regional development will be observed, based on a general analysis of the policies in which higher education institutions should directly influence, through the exercise of their mission functions, legally defined by the state.

### **Continuous Improvement**

For the purposes of this research, the concept of continuous improvement is the fundamental purpose of the management and quality assurance systems that are implemented in higher education institutions in order to comply with the applicable national regulations, they will be defined as the capacity to increase in a recurrent way over time, the level of performance of the indicators defined by the institutions and the academic programs to satisfy the social needs and meet the quality conditions and the accreditation or certification guidelines established by the control entities of higher education.

### **Quality Assurance**

The assurance of quality is a natural part of the evolution of humanity, since there has always been an effort to ensure the functioning of the goods produced by man and improve them continuously. Throughout history the first written norm that demonstrates this purpose is the code of Hammurabi. This code regulated a severe punishment to the architect that causes the death of a human being, in case of technical failures in the construction, in the year 1750 BC. (Franco, n.d., p.353). In

relation to these origins, it is necessary to highlight what Professor Maria Angelica Navarro pointed out:

The rise of the concept of quality from the theoretical level and in the application began in the nineteenth century, along with the organizational needs of the military industry and the countries in the Second World War, with theoretical advances as follows: quality control by inspection, the statistical control of quality; the cycle Plan, Do, Check and Act (PHCA) of Shewhart (1924), taken up by Edwards Deming (1989), to support the management of the development and growth of Japan after the Second World War, with excellent results visible even in the present (Navarro, 2017). In the eighties, faced with a globalized market, the "Total Quality Processes" were born, which include planning, design and research; advancing the need to ensure quality, from all organizational components with leadership, staff participation, process management, and customer focus, both in the production of physical goods, and in the supply of intangible services. The most significant contribution in this new stage of quality was the importance that human talent took for teamwork and problem solving, leading to the creation of new knowledge in a systematic way, Cubillos y Roza (2009) quoted by Navarro (2017, p.22), which meant a new way of thinking and working in organizations, based on the culture of continuous improvement of total quality. (Navarro, 2017, p.22)

Since 1987, the International Organization for Standardization -ISO- and to date, has published the international quality standards with greater acceptance worldwide. In doing this, the organisation promotes the implementation and certification of quality management systems (QMS), based on the principles of the management of the quality contained in the ISO 9000 standard (International Organization for Standardization -ISO-, 2015a), as previously detailed in this paper; and required for effective management of its components: Context of the organization, leadership, planning, support, operations, performance evaluation and improvement. All these components have been taken as a theoretical reference for the creation of other applicable standards in different sectors and countries, as is the case of Colombia in which the ISO 9001 standard was adapted (ISO, 2015), to apply it in a mandatory way to entities of the public sector, including public higher education institutions, through the adaptation called: Technical Quality Standard for Public Management -NTCGP 1000 (ICONTEC, 2009).

### **Quality Assurance in Higher Education**

Starting in the nineties, the countries in Latin America, pioneers together with New Zealand worldwide, initiated processes of creation and implementation of systems and agencies of evaluation and accreditation for the recognition of high quality of Higher Education Institutions and of the programs offered by them. The aforementioned in view of the role that higher education in the region must play in the formation of advanced human capital by constituting: An essential component of the growth and competitiveness of nations, as a decisive factor in expanding the

opportunities of people in the region, labor market and favoring social mobility, as well as playing a key role for the functioning of the institutions that make democratic governance possible and the development of countries, (CINDA, 2012 as cited in Navarro, 2017, page 23).

The implementation of quality assurance processes responds to the specific needs and realities of each national higher education system, and in general, to "a common denomination for a variety of mechanisms tending to control, guarantee and promote the quality of institutions of higher education "CINDA (2012), based on the interaction and information of different actors involved in the educational process. (Navarro, 2017, p.23)

Educational quality means developing an organizational culture oriented towards evaluation, continuous improvement and innovation, both in the program and in the institution, which implies the deployment of policies, strategic programs, projects, actions and resources that are integrated into development plans, promote the fulfillment of missionary statements and an ideal of excellence with active participation of the institutional community. For this to be a strategic priority as proposed by Guzmán (2011), it is necessary that each institution has an adequate organizational structure, processes and mechanisms that make permanent monitoring of the pertinence, efficiency and effectiveness of the work of the academic programs, of the faculties and of the institution, within the framework of a process of self-regulation, whose visible expression before the society and the academic world is the temporary accreditation and its continuous renewal.

### **Quality Assurance in Latin America**

In coherence with international approaches, in Latin America as well as in Europe, each country has models and quality assurance mechanism, according to what is stated in the report of Models and mechanisms of quality assurance in Latin America (CINDA, 2012 cited in Navarro, 2017, page 23). This research paper sets out the models and mechanism for quality assurance, implemented in 12 countries in Latin America and four European countries, describing the country, the agencies, the dependency, the purpose, the character, the procedure and the level, as well as the degree of implementation of the quality assurance system, which can be: established, in the initial phase and in the process of formation; within which it is identified that the assurance of the quality of higher education depends on state control; Colombia is classified in countries that have an established quality assurance system, along with Portugal, Spain, Chile, Mexico and Costa Rica; and to Ecuador in those that are in the initial phase, along with Panama, Uruguay, Brazil and Peru.

In the same way it is observed that in Colombia there are four organisms that administer this theme, such as the Ministry of Education, the National Intersectorial Commission of Quality Assurance of Higher Education, the Colombian Institute for the Promotion of Higher Education and the Council National Accreditation; and that in

Ecuador there is only one body that administers this subject, called the Council for evaluation, accreditation, and Quality Assurance of Higher Education in Ecuador - CEAACES-, which is formed after the modification of the former National Council for Evaluation and Accreditation of Higher Education –CONEA-.

### **Quality Assurance in Colombia**

In Colombia, according to the accreditation guidelines for undergraduate programs (Consejo nacional de acreditación, 2013b), "the concept of quality applied to the public good of higher education refers to the synthesis of characteristics that allow recognizing a specific academic program or an institution of a certain type and make a judgment about the relative distance between the way in that institution or in that academic program that service is provided and the optimum that corresponds to its nature. To approach this optimum, the National Accreditation Council has defined a set of general characteristics, from which the judgments on the quality of institutions and academic programs are issued. "It is observed that from the reference of international referents, for Colombia, it is preponderant that higher education contributes to regional development and that, it works around two concepts, academic relevance and social pertinence, which will be discussed in this paper.

### **Quality Assurance in Ecuador**

In the case of Ecuador, the assurance of Quality is established in the Organic Law of Higher Education, chapter 1 of the principle of quality,

Art. 93.- Principle of quality.- The principle of quality consists in the constant and systematic search for excellence, relevance, optimal production, transmission of knowledge and development of thought through self-criticism, external criticism and permanent improvement. Art. 96.- Quality assurance. - The Quality Assurance of Higher Education is constituted by the set of actions carried out by institutions linked to this sector, in order to guarantee efficient and effective management, Applicable to careers, academic programs, institutions of higher education and also to the councils or bodies of evaluators and accreditors. (Presidency of the Republic of Ecuador, 2010, page 17).

### **Academic Relevance**

According to the analysis of international and especially national theoretical and normative precepts, the concept of "academic relevance" is worked, to identify the contributions to regional development, from the impact that academic programs and institutions of higher education make on the community scientific of its discipline, of other disciplines and concretely in the application of said academic aspects in the context.

For the purposes of this research, academic relevance is fundamentally defined based on the guidelines for accreditation of undergraduate academic programs (Consejo Nacional de Acreditación, 2013b, p.20), considering the aspects to be evaluated

related to characteristic number three. Understanding that the academic relevance of an academic program and an institution, should be demonstrated from the alignment and contribution to the trends and lines of development of the discipline or profession at the local, regional, national and international levels, updating and relevance of the curriculum according to the needs of the environment; the changes in the curriculum, resulting from experiences related to the analysis and proposed solutions to the problems of the context, among other aspects that will be described more concretely in the development of this research in articulation with the social pertinence.

### **Social Pertinence**

Consistent with the purpose of this research, social pertinence is conceptualized as a priority, revisiting the guidelines for accreditation of undergraduate academic programs (Consejo Nacional de Acreditacion, 2013b, p.11), as "the capacity of the institution and its program to respond to the needs of the environment. Needs to which the institution or the academic program does not respond passively, but proactively, with actions to transform the context in which it operates, within the framework of the values that inspire the institution and define it". In equal measure, the aspects to be evaluated related to characteristic number three of said guidelines will be taken into account. This concept is complemented by the concept of pertinence, given by (García, 2002, p.4), who defines it as "the degree of contribution or intervention of the universities in the solution of the needs or demands of society, in their technical and social dimensions, current and future, the contributions and the way these educational institutions are felt, studied, and perceived by society, in an interaction that takes the environment as its object of study in order to identify problems, propose solutions and participate in them, from a reflective position that allows to maintain in force the principles inherent to its condition of university, worthy of respect and that deserves the support of the community".

In the Organic Law of Higher Education of Ecuador (Presidencia de la Republica de Ecuador, 2010, p.19), in Title VI, chapter one, in the Article. 107, explains that.

### **Legal Framework**

The following is the general regulatory framework applicable to quality assurance and continuous improvement of higher education in Colombia and Ecuador, as a basis for regional development.

### **Legal Framework of Higher Education in Ecuador**

In Ecuador the Political Constitution of the Republic, in articles 28 and 29 of the first section, affirms that higher education will respond to the public interest and that it will be inclusive, and accordingly, between article 350 and 357, it guides the generalities of the functioning of the higher education system (Asamblea et al., 2008, pp. 16,108-136); In a complementary manner, the Organic Law on Higher Education was issued (Presidencia de la Republica de Ecuador, 2010); the 2013 Academic Rules



Regulation, which defines the levels of higher education training (Council of Higher Education, 2013); and Resolution 104 of 2014 of the CEAACES, regulates the process of Evaluation, Accreditation and Categorization of Careers of the Universities and Polytechnic Schools; and specifically in the fifth chapter, regarding the categorization and accreditation of careers. (CEAACES, 2015, p 2.11). According to the qualification of the learning environment and the national exam for the evaluation of careers - ENEC-, three categories are defined, 1) accredited, 2) in process of accreditation or 3) not accredited. This regulation is deployed through the Accreditation and Quality Assurance System and the Higher Education Council, organizations that guide the functioning and the search for excellence and the relevance of institutions and careers.

### **Legal Framework of Higher Education in Colombia**

The Political Constitution of Colombia (Consejo Superior de la Judicatura, 2015, pag 59) establishes in article 64, that it is the duty of the State to promote progressive access to the education service; in article 67, which is a right and a public service; and in article 69 that "the State shall provide financial mechanisms that make possible the access of all persons suitable for higher education"; in consonance With Law 30 of 1992, the public service of Higher Education in Colombia, (Congreso de La Republica de Colombia, 1992, p.1) and Decree 1075 (Ministerio de Educacion Nacional de Colombia, 2015), in part 5, title 3, chapter 2, in ten sections describes the requirements related to the management and renewal of the qualified register, this being the first level of quality required for the offer of undergraduate and postgraduate academic programs.

In response to the high standards imposed by the social and productive sector needs, as well as the international context, accreditation of academic programs is defined as a second level of quality for Higher Education Institutions, for which there is a wide range of regulations that encourages the development of these voluntary processes of high quality accreditation. In this regard it is necessary to review that by means of Law 1753 of 2015 (Congress of the Republic of Colombia, 2015, p.101), by which the National Development Plan 2014 - 2018 is issued, the obligation of high-level accreditation was determined quality for the degree programs and the privilege for the allocation of financing resources and educational credit for the accredited institutions; and in correspondence, the preliminary version of the Quality Guidelines for Bachelor's Degrees in Education was issued (Ministerio de Educacion Nacional de Colombia, 2014). Academic programs for other areas of knowledge, Guidelines for accreditation of undergraduate programs (National Accreditation Council, 2013b) and Guide No. 3. Self-assessment procedure for accreditation of undergraduate programs (National Council was published of Accreditation, 2013a); which provide the basic guidelines to develop the corresponding processes. And the third level of official quality of higher education institutions in Colombia is determined by Guidelines for institutional accreditation (National Accreditation Council, 2014).

## **International Standards for the Management of Continuous Improvement**

As a contribution to the processes of continuous improvement and accreditation, and with the objective of providing publicly accredited quality services, nationally and internationally, the programs and Institutions of Higher Education have adopted international standards for the discipline of each area of the knowledge, endorsed by prestigious associations and universities; as well as technical standards that contribute to the specialized management of different topics that must be integrated strategically. Some of the International Technical Standards of greater application are the following:

- NTC ISO 9001 - Quality Management Systems (International Organization for Standardization -ISO-, 2015b)
- NTC ISO 14001 - Environmental Management Systems. Requirements with Guidance for its Use (ICONTEC, 2015).
- Standard 18001 - Occupational Health and Safety Management (OHSAS, 2007) which will soon be replaced by the ISO 45001 standard, which is being revised by the ISO.
- NTC ISO 17025 - General requirements for the competence of testing and calibration laboratories (International Organization for Standardization -ISO-, 2005).
- NTC ISO 26000 - Corporate Social Responsibility (International Organization for Standardization -ISO-, 2010)
- NTC ISO 31000 - Risk Management. Principles and Guidelines (ICONTEC, 2011).

It is important to consider as a precedent, that the public universities of Colombia have implemented the Technical Quality Standard for Public Management -NTCGP 1000-, because it is a legal requirement for the entities of the Colombian State, and, under this imposition, they have decided to overcome the legal requirement, and have certified their academic processes internationally, with the ISO 9001 standard (International Organization for Standardization -ISO-, 2015b), since the NTCGP is an adaptation of this standard, for Public Management of Colombia (ICONTEC, 2009 ).

## **Internal Rules and Plans of the Institutions of Higher Education**

Considering the concepts and norms applied in each country, the institutions define the institutional educational project, the strategic development plan and the internal rules that will make it possible to fulfill its mission in the context.

## **Methodological Approach**

The following information was taken from the research "Study of Academic Relevance and Social Pertinence of the Bachelor's Degree Program in Early Childhood

Education" of the Faculty of Education of the CESMAG Institution, of the city of Pasto -Nariño, which the teacher advances researcher Mg. María Angélica Navarro Sánchez, (2017).

To carry out this research, we carried out a descriptive, analytical and exploratory study, with a social cut because its object of study is focused on the educational phenomenon, the qualitative - interpretative paradigm is determined (Restrepo, 2002), being phenomenological, naturalistic and subjective, that is, that is oriented to the understanding of the phenomenon, to be studied from within and in its natural environment, emphasizing understanding and whose validity is the result of the richness of the data and the holistic approach.

The paradigm is qualitative (Hernández, R., Fernández, C., and Baptista, P. 2008), because "the aim is to understand the perspective of the participants (...) about the phenomena that surround them, to deepen their experiences, perspectives, opinions and meanings, that is, the way in which participants subjectively perceive their reality" p. 364

This research involves the revision of papers related to higher Education, quality assurance; development plans and objectives, and competitiveness indicators, for the analysis of information in the contexts: macro -International-, meso - National of Colombia-, and micro -of Higher Education Institutions of Colombia-. Also to strengthen the structuring of the strategic component of this research, the observation of national and international experiences, and interviews carried out with a focus group of professors and managers from different institutions and academic programs of higher education, such as Corporación Universitaria Minuto de Dios, Corporación Universitaria Remington, Institución Universitaria CESMAG, Universidad Católica de Pereira, Universidad Central, Universidad EAFIT, Universidad de La Salle, Universidad del Rosario, Universidad de los Andes, Universidad de Manizales, Universidad de Nariño, Universidad ICESI, Universidad Industrial de Santander, Universidad Javeriana, Universidad San Buena Ventura, Universidad Militar Nueva Granada; in Ecuador, Universidad Técnica del Norte, Universidad Politécnica Estatal del Carchi y Universidad de las Fuerzas Armadas ESPE.

On the other hand, Díaz and Navarro (1998, cited in Fernández, F, 2002) explain that the content analysis can be conceived as a set of procedures that aim to produce an analytical meta-text, in which the textual corpus is represented in a transformed way. (...) Or, in other words, it has to be conceived as a procedure designed to destabilize the immediate intelligibility of the textual surface, showing its aspects that are not directly intuitive and yet present (pages 181 and 182)

In this way, the content analysis is adapted to the interests of the researcher and allows for the establishment of the level of utility for:

"Describe trends and reveal similarities or differences in the content of written communication between people, groups, organizations, countries, etc. Identify attitudes, beliefs, desires, values, interests, goals, etc., of people, groups, organizations, countries, etc. Analyze the content of the communications and audit it comparing it against standards. Compare the content of the communication by means of the research of the means and the levels used." (Fernández, 2002, p.37)

Among the characteristics that stand out in this technique are its objectivity, because the objectives and procedures to be followed are clearly defined and allows the reproduction of the analysis by other researchers who wish to verify the results obtained; systematization, by allowing the analysis of the contents from a system applicable to each and every part of the paper.

Similarly, it stands out for being susceptible to quantification, since its results can be expressed in indicators and be subject to numerical transformation.

## **Results of the Research**

### **Analysis of the Normative and Conceptual Context of Higher Education for Colombia and Its Contribution to Regional Development**

According to UNESCO, the World Conference on Higher Education (CMS) (1998), as well as different texts and authors, through history, it is concluded that higher education institutions have as their fundamental mission to promote regional development; However, this clear paradigm is often blurred, given the complexity of the internal and external realities of these entities. The high demand of the higher education service is one of the most important challenges to be solved worldwide, as a proactive or reactive measure depending on the context. Given this situation, at the international level, quality assurance systems have been adopted voluntarily and in other cases compulsory, which contribute to the purpose of balancing the balance of coverage and quality in the provision of this public service.

Quality assurance systems in all countries and their different methodological and theoretical approaches coincide in the fundamental purpose of promoting continuous improvement through technical tools, such as management indicators allow measuring, analyzing and making continuous improvement decisions.

Regarding regional development, we have identified that in Colombia the quality assurance system has established the accreditation guidelines for undergraduate academic programs (Consejo Nacional de Acreditacion, 2013b, p.8.20), that for a academic program is accredited in high quality, this must demonstrate satisfactorily, among other aspects to evaluate, significant evidence regarding academic relevance and social pertinence. Specifically, this is defined in characteristic three of these guidelines.

## **Methodological Strategy to Continuously Improve the Contribution of Higher Education to Regional Development**

The methodological strategies to continually improve the contribution to regional development from higher education set out below, are structured taking into account the parameters used at the national and international level previously reviewed, and the concepts on which this study has been oriented, which are "academic relevance" and "social pertinence".

The norms and theories of quality assurance of higher education nationally and internationally, are clearly based on the methodology of continuous improvement of the -PDCA- cycle (Deming, 1989), plan, do, check and act; which in the case of Colombia is adapted to the accreditation guidelines of the undergraduate academic programs (Consejo Nacional, 2013b, p.17), with the following dynamics: say what you do, do what you say, check it and improve it.

To structure an academic program or an institution determined to contribute to regional development, policies, strategies, objectives and monitoring and management methodologies should be established to guarantee compliance with said purpose. These include those referred to below, starting with the review of success stories from universities in Latin America, Europe and the United States.

### **System of Quality Management and Process Management**

The high level universities have decided to adopt quality management systems, and their components, according to the technical standard ISO 9001 (International Organization for Standardization -ISO-, 2015b), with the purpose of optimizing its administrative model and its processes with a focus towards: satisfaction of social needs, leadership and participation of the academic community, process management, continuous improvement, decision-making based on indicators and management of relationships with stakeholders.

To meet the requirements and needs of the context of the organization; assertively lead the deployment of strategic planning; ensure due institutional support in the competition and awareness of human talent, the management of documented information, communications and infrastructure that fosters an adequate work environment for the development of mission processes, the evaluation of performance and continuous improvement through self-control, audits and periodic management reviews.

One of the great methodological aspects that makes the implementation of quality management systems possible is to adopt process management, which makes knowledge of the activities - PDCA -, the objective, the scope, the leader and actors of each process possible ; as well as the inputs (inputs); the requirements of internal, external customers and interested parties (who receive the service or product); the products or services (outputs); the applicable regulations; the referenced concepts;

the generated records; the risks that must be foreseen, the information and the physical and technological resources required; the control points; the articulation with other processes; among other aspects, as required. In this regard it is clarified that discussions have already taken place, in which it has been agreed that although the standards speak from productivity in general, with terms such as product or client, from a complex analysis, universities must recognize that the student is not only a customer of any product or service, but is a human being with individual, family, social, economic and cultural characteristics, and that represents the needs of the context, which must be met through the provision of the service of higher education, which this requires conditions of high quality and that only occurs through human interaction between students, teachers and the academic community with which it interacts.

In a preponderant manner, it is suggested to adopt an administrative tool validated by higher education institutions, such as process management. In this way, it is possible to continuously improve the management indicators of general higher education and those that show academic relevance and social pertinence, as a contribution to regional development.

In order to briefly study the university process management, based on the study of management systems in this sector, this research proposes a general process map, which can be adapted according to the structure, nature, philosophy, planning, the dynamics and priorities of each higher education institution. This process map represents the interaction and articulation that the processes should have, in order to respond to the needs of the region, improving continuously; and it contains the major processes that are generally carried out in this type of entity, according to three types of processes; according to the nature of their objectives, which are: strategic, missionary, and support processes, briefly described below.

As strategic processes are defined: leadership and planning, and quality assurance, responsible for guiding the institution in the development of the mission and the achievement of the vision, in coherence with the educational project, the development plan, the quality, and the needs of the region, according to the conditions of the same organization.

The mission processes are those that execute the functions for which this type of institution was created, which are education, research, and social projection, with the transversal component of internationalization that is currently required from different normative perspectives and context.

The support processes are those that support the mission statement and the other processes, for which from this research it is proposed to identify and manage what refers to human management; wellness; support to mission processes, which contains the demanded activities to guarantee said processes, from logistics and infrastructure aspects, such as laboratories, experimentation centers, libraries, or others as

required; management of technology, information and communication; infrastructure; financial management, and legal.

The denomination and location of the processes presented in this study, may vary according to the analysis of the realities, the conceptualization of each term, and the agreements that each institution must reach according to its reflections, the country, the regulations, the philosophy and the theoretical references that you wish to adopt.

### Process Map Model for Higher Education Institutions



Figure Research design Source: self made.

### Define Intelligent Objectives

It is suggested to implement the methodology for the definition of SMART objectives (Doran, 1981); so that higher education institutions and their academic programs, consistent with their mission statement, their philosophy, their region and their strategic approaches, define specific, measurable objectives, assigned to responsible, realistic and capable of applying traceability.

### Smart Objectives of Higher Education to Contribute to Regional Development

Smart Objectives of Higher Education to Contribute to Regional Development

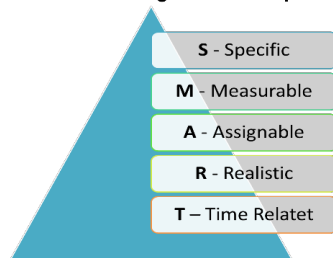
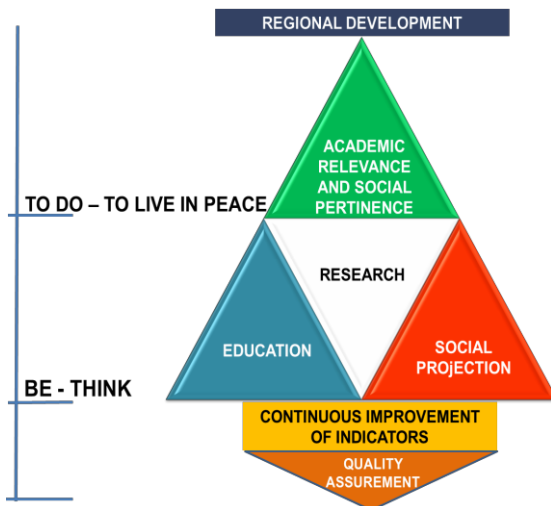


Figure Research design Source: self made, adapted from methodology for the definition of SMART objectives (Doran, 1981)

## Strategic Model to Continuously Improve the Contribution of Higher Education to Regional Development

The assurance of quality promotes the continuous improvement of management indicators of academic relevance and social pertinence, which contribute to regional development, from higher education; with the strategic deployment of knowledge, by developing in the students and the academic community "being" and "thinking", with internal processes of academic formation, research and social projection; to transcend in "doing" and in "living together", in the case of Colombia, living in peace. In accordance with the elements and methodologies analyzed in this research, a series of management strategies are proposed to continuously improve the contribution of higher education to regional development.

## Strategic Model to Continuously Improve the Contribution of Higher Education to Regional Development



**Figure Research design Source: self made.**

In accordance with the elements and methodologies analyzed in this research, a series of management strategies are proposed to continuously improve the contribution of higher education to regional development.

- Quality assurance is defined and deployed from the managerial level to the operational level, a strategic approach focused on the interdisciplinary solution of the problems of the context, exercising a competent, participative and assertive leadership; as do the leading international universities, which have already assumed the responsibility of redefining their institutional educational project, in widely participatory scenarios, applying verifiable collaborative work, with students, graduates, professors, administrators, executives, entrepreneurs from



the public and private sectors; even counting on the advising, accompaniment of expert academic peers of the national and international scope.

- Promote the production, use and evaluation of teaching support materials, relevant to the nature and methodology of the program and its pedagogical function. Which through socialization processes with internal and external academic communities.
- Guarantee the relevance, updating and sufficiency of the bibliographic material, the databases, the laboratories, and the physical and technological infrastructure, to support the development of academic, research and social projection activities.
- Define, implement and assertively improve the policies, strategies and institutional processes in terms of research, innovation and artistic and cultural creation, evidenced in research, innovation and creative products, widely recognized for their high quality and relevance, on the part of of the academic community and society at the local, national and international levels.
- Evaluate the contribution to regional development, by studying the academic relevance and social pertinence of careers, using the information contained in labor observatories and other sources that express the reality of the graduates of each discipline; depending on the application of the skills acquired and the quality of life that this has generated; and make the necessary improvement decisions.
- Managing efficiency and transparency in the planning, selection, evaluation, training, permanence, participation, remuneration and promotion processes in the merit-based ranking of professors; to guarantee a sufficient team of professors with high academic level and of conscience, evident in the correct application and innovation of teaching and learning strategies in production recognized for their relevance and academic relevance.
- Demonstrate the strategic planning and execution of leadership, administrative and financial support based on social and academic relevance, in interaction with the national and international context.
- It is also possible to observe the need to increase the number of professors and managers of higher Education of Latin America, with doctoral training in administration and in each one of the disciplines offered by universities, to guarantee a generational change of the human talent, relevant to the development of the regions; situation in which to have the cooperation of Europe is fundamental, both in the access to their academic programs and in the advice in the creation of their own doctorates, since in Latin America this type of academic opportunity is not available and the trained doctors currently they correspond in the area of education in its majority.
- A key component to any notion of democracy and fundamental building block of democratic theory is the centrality of participation to the democratic process and

the importance of having an educated citizenry to facilitate this process. This seemingly self evident truth can be a driving force in the promotion of community and political participation. Access to Institutions of higher education can faster encourage and support community and political organizations because in this way innovation and promotion are encouraged in defense of democratic processes in institutions built on the notion of trust in reciprocity.

Education serves as a fundamental and critical building block to further promote and encourage political, social and economic development within the context of regional development. The establishment of democratic institutions as well as free and open markets, both critical to regional development efforts, require an informed and educated populace. In many Latin American countries political participation is often restricted by a multitude of factors. Not all citizens have equal access to the political process and one of the major factors affecting this include lack of access to institutions of higher education, because an educated populace facilitates the institutionalization of democracy. Education is critical and key to both regional and, ultimately, national economic development strategies.

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### **Conclusions and Recommendations**

It is important to continue investing in research and in the application of strategies that favor the improvement of the contribution of higher education to regional development in Latin America, from the pertinence of higher education and academic relevance, based on the participation of the academic community in interaction with the actors of the context.

In order for higher education to contribute effectively to regional development, it is necessary to apply the principles of quality assurance in an articulated manner in mission processes and, as a priority, to focus on society, leadership, competence and awareness. of the academic community, management by interrelated processes, continuous improvement, decision-making based on indicators and the management of local, national and international relations.

The normative context of higher education for Colombia, Ecuador and Latin America, promote the continuous improvement of aspects that contribute to regional development.

There are several methodological strategies to continually improve the contribution of higher education to regional development; quality assurance with its management tools represents one of the best-validated alternatives nationally and internationally.

Considering the high social responsibility of universities, it is necessary to deepen the formulation and monitoring of management indicators of higher education that contribute to regional development. The quality of higher education is the key to generating real and sustainable regional development strategies.

To achieve regional development through the continuous improvement of higher education in Latin American countries, an excellent alternative is to have European cooperation, with support for access to doctorates in each discipline; and with the advice for the strategic management of higher education for the creation of own doctoral programs, appropriate to Latin American countries.

## References

- [1] Asamblea Nacional Constituyente. (2008). Constitución Política De La República Del Ecuador, 1-61.
- [2] CEAACES. (2015). Resolución 104 del 2014. Reglamento de Evaluación, Acreditación y Categorización de Carreras de las Universidades y Escuelas Politécnicas. Quito. Recuperado de <http://www.ceaaces.gob.ec/sitio/wp-content/uploads/2013/10/REGLAMENTO-DE-EVALUACION-ACREDITACION-Y-CATEGORIZACION-DE-CARRERAS-DE-LAS-UNIVERSIDADES-Y-ESCUELAS-POLITECNICAS.pdf>
- [3] Congreso de la República de Colombia. (1992). Ley 30 de Diciembre 28 de 1992; Por el cual se organiza el servicio público de la Educación Superior. Bogotá D.C.
- [4] Congreso de la República de Colombia. (2015). Ley 1753 de 2015, Plan Nacional de Desarrollo 2014 - 2018 "Todos por un Nuevo País." Bogotá D.C. Recuperado de [http://www.mincit.gov.co/loader.php?lServicio=Documentos&lFuncion=verPdf&id=78676&name=Ley\\_1753\\_de\\_2015.pdf&prefijo=file](http://www.mincit.gov.co/loader.php?lServicio=Documentos&lFuncion=verPdf&id=78676&name=Ley_1753_de_2015.pdf&prefijo=file)
- [5] Consejo de Educación Superior. (2013). Reglamento de Régimen Académico. Quito.
- [6] Consejo Nacional de Acreditación. (2010). Lineamientos para la Acreditación de Alta Calidad de Programas de Maestría y Doctorado. Bogotá D.C. Recuperado de [https://www.cna.gov.co/1741/articles-186359\\_Lineamiento\\_Maestria\\_Doctorados.pdf](https://www.cna.gov.co/1741/articles-186359_Lineamiento_Maestria_Doctorados.pdf)
- [7] Consejo Nacional de Acreditación. (2013a). Guía No. 3 Autoevaluación con fines de Acreditación de Programas de Pregrado. Bogotá D.C.
- [8] Consejo Nacional de Acreditación. (2013b). Lineamientos para la acreditación de programas de Pregrado. Bogotá D.C.

- [9] Consejo Nacional de Acreditación. (2014). Lineamientos para la Acreditación Institucional. Bogotá D.C. Recuperado de [http://www.cna.gov.co/1741/articles-186359\\_Lin\\_Ins\\_2014.pdf](http://www.cna.gov.co/1741/articles-186359_Lin_Ins_2014.pdf)
- [10] Consejo Nacional de Educación Superior -CESU-. (2011). Acuerdo 02. Por el cual se establecen criterios para los procesos de Acreditación de Instituciones y Programas Académicos de Educación Superior. Bogotá D.C. Recuperado de [https://www.cna.gov.co/1741/articles-186370\\_Acuerdo\\_02\\_2011.pdf](https://www.cna.gov.co/1741/articles-186370_Acuerdo_02_2011.pdf)
- [11] Consejo Nacional de Educación Superior -CESU-. (2012). Acuerdo 02 Por el cual se establece la apreciación de Condiciones Iniciales de Acreditación de Programas Académicos. Bogotá D.C. Recuperado de [https://www.cna.gov.co/1741/articles-186359\\_Condiciones\\_Iniciales\\_Acuerdo\\_02\\_2012.pdf](https://www.cna.gov.co/1741/articles-186359_Condiciones_Iniciales_Acuerdo_02_2012.pdf)
- [12] Consejo Superior de la Judicatura. (2015). Constitución Política de Colombia. Bogotá D.C.
- [13] Delgadillo, J. (2001). El Desarrollo Regional de Mexico en el Vertice de Dos Milenios.
- [14] Deming, W. E. (1989). Calidad, Productividad y Competitividad: la salida de la crisis. (D. de Santos, Ed.). Madrid.
- [15] Doran, G. T. (1981). There's a S.M.A.R.T. way to write managements's goals and objectives. Management Review.
- [16] Franco, G. (n.d.). Las Leyes de Hammurabi. Versión española, introducción y anotaciones. Puerto Rico. Recuperado de [http://rcsdigital.homestead.com/files/Vol\\_VI\\_Nm\\_3\\_1962/Franco.pdf](http://rcsdigital.homestead.com/files/Vol_VI_Nm_3_1962/Franco.pdf)
- [17] García, F. (2002). Curriculum y Pertinencia Docencia Universitaria. Docencia Universitaria, III(1984), 107–123. Recuperado de [http://www.ucv.ve/fileadmin/user\\_upload/sadpro/Documentos/docencia\\_vol\\_3\\_n2\\_2002/8\\_art\\_5\\_fernando\\_Ga rcia.pdf](http://www.ucv.ve/fileadmin/user_upload/sadpro/Documentos/docencia_vol_3_n2_2002/8_art_5_fernando_Ga rcia.pdf)
- [18] ICONTEC. (2009). Norma Técnica de Calidad en la Gestión Pública NTCGP 1000:2009. Bogotá D.C.
- [19] ICONTEC. (2011). Norma Técnica Colombiana, Gestión del riesgo principios y directrices NTC-ISO 31000. Bogotá D.C.
- [20] ICONTEC. (2015). NTC ISO 14001 Gestion Ambiental. Requisitos con Orientación para su Uso. Bogotá D.C. [21] Ministerio de Educación Nacional de Colombia. (2011). Acuerdo 03 - Acreditacion Programas de IES
- [21] Acreditadas. Bogotá D.C. Recuperado de [https://www.cna.gov.co/1741/articles-186370\\_Acuerdo\\_03\\_2011.pdf](https://www.cna.gov.co/1741/articles-186370_Acuerdo_03_2011.pdf)

- [22] Ministerio de Educación Nacional de Colombia. (2014). Lineamientos de Calidad para las Licenciaturas en Educación. Bogotá D.C.
- [23] Ministerio de Educación Nacional de Colombia. (2015). Decreto 1075 del 2015. Bogotá D.C.
- [24] Navarro, M. A. (2017). Estudio de Relevancia Académica y Pertinencia Social del programa de Licenciatura en Educación Infantil. San Juan de Pasto.
- [25] OHSAS. (2007). OHSAS 18001:2007 Sistema de Gestión en Seguridad y Salud Ocupacional – Requisitos.
- [26] Organización Internacional de Normalización -ISO-. (2005). Norma Internacional ISO/IEC 17025, Requisitos generales para la competencia de los laboratorios de ensayo y de calibración. Ginebra.
- [27] Organización Internacional de Normalización -ISO-. (2010). Norma Internacional ISO 26000. Ginebra.
- [28] Organización Internacional de Normalización -ISO-. (2015a). Norma Internacional ISO 9000 - Sistema de Gestión de Calidad - Fundamentos y Vocabulario. Ginebra.
- [29] Organización Internacional de Normalización -ISO-. (2015b). Norma Internacional ISO 9001. Order A Journal On The Theory Of Ordered Sets And Its Applications. Ginebra.
- [30] Presidencia de la República de Ecuador. (2010). Ley orgánica de educación superior. Quito.
- [31] UNESCO. (1998). Conferencia Mundial sobre la Educación Superior, La educación superior en el siglo XXI, Visión y acción. Conferencia Mundial Sobre Educación Superior. Recuperado de <http://unesdoc.unesco.org/images/0011/001163/116345s.pdf>