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CHARACTERIZATION OF THE INTERNAL EFFICIENCY OF PUBLIC UNIVERSITY STUDENTS USING INDICATORS OF EDUCATIONAL QUALITY MODELS

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Abstract. Speaking of quality is a topic very important in all organizations because the success of its management depends on it; however, it is even more important to talk about quality in education, the result of which are the professionals who will lead the organizations. The internal efficiency measures and evaluates annually through indicators the situation of the student in the development of their activities in the educational exercise. Taking the quality model of SINEACE as a reference in this work in comparison with other quality models, we talk about the evaluation of internal efficiency within the Accounting and Electrical Engineering programs.

Keywords: Educacion, Calidad, Universidades Públicas, Eficiencia Interna

1 Introduction

Nowadays there is a lot of talk about improving the quality of education, there is pressure to fulfill certain tasks to achieve results, but we really know what do you want with the quality of education? And where do you want to go with her? The State gives policies with respect to education which every day are more immersed in quality, however, this is not coherent with the budgets since there

are many deficiencies in terms of the resources that are required. In Peru, the General Education Law No. 28044 includes for the first time the term of educational quality, formulating the operating bodies in basic and higher education. Being the National System of Evaluation, Accreditation and Certification of Educational Quality (SINEACE) e1 in Peru, who formulates the norms and structured procedures aspires to define and establish through analysis and make the assessment that must be done to improve quality educational. This evaluation matrix formulated by SINEACE is organized in 4 dimensions, 12 factors and 34 standards that are accompanied by criteria to be evaluated, where the study program must explain through verifiable evidence, which responds to what is required in Figure 1.

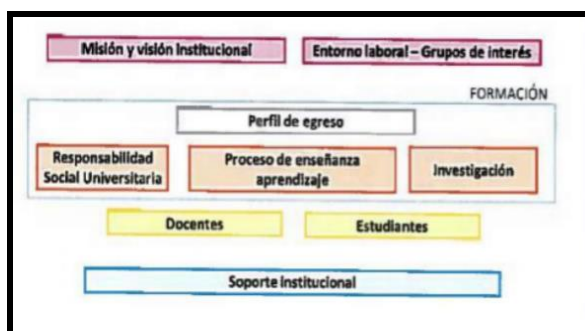


Fig. 1. Structure of the graduation profile formation.

In the logic described, the graduation profile plays a very important role within the professional career, the accreditation of academic programs in higher education is important, since in this way the same university actors review, analyze and verify through of an internal and external evaluation of the quality of its program in relation to the academic, human and professional formation of the students, evaluated through indicators [1].

It is pertinent to consider the evaluative or self-evaluation aspects, so Kells [2], one of the first to edit the concepts of institutional self-evaluation, tabulates a series of general indicators for this evaluation process, defining some concepts that have been placed for the purpose of framing it theoretically. Self-assessment, within the context of this work, is the process of studying an institution or one of its parts, faculty, department, service unit, or program, which is organized and conducted by its own members, in light of the aims of the institution and with some accepted set of performance standards as a reference [3].

The database of the Information Systems on Educational Trends in Latin America (SITEAL) 2 aims to: provide comparable information among Latin American countries on the relationship between education and society that makes it possible to analyze trends and monitor the situation and evolution of social gaps [4]. This Information System on Educational Trends in Latin America is a program jointly developed by the International Institute for Educational Planning - Buenos Aires (IIEP - UNESCO, Buenos Aires Regional Headquarters) and the Organization of Ibero-American States for Education, the Science and Culture (OEI). This Program began to operate at the beginning of 2003.

- **Cyclical Evaluation**

Although the end of the process is formally indicated by the accreditation judgment of the Commission, it is necessary to take into consideration the control and monitoring of the improvement actions planned by the unit [5].

This stage, to which many times not enough attention is paid, is critical, since it depends on it that the process is effectively oriented to concrete and permanent improvement of quality. On the other hand, self-evaluation processes are cyclical [4] and must be understood in a management context: evaluation, planning, implementation of measures, control and monitoring, and again evaluation and quality control, as shown in the figure two.

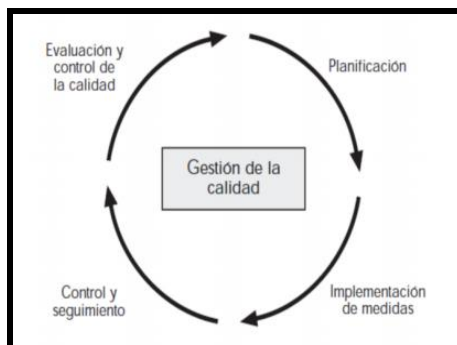


Fig. 2. Quality management

It is necessary to emphasize that although quality is spoken of in educational institutions, this is not reflected in management, so it is necessary to generate a culture of quality, in order to improve quality in higher education, provide more support to effective research in solving problems that impact public and private organizations in order for the country to have social and economic development.

2 Methods and Materials

A. Analysis

The objective of this research is to analyze the various indicators that measure educational quality to establish internal efficiency and the relationship that exists between students of engineering sciences and Accounting Sciences will allow evaluating and improving educational processes and therefore the formation of electrical engineering and accounting science students. Indicators were established in order to evaluate and improve the processes of engineering and accounting careers, which will be analyzed according to international model standards in both careers and in this way suggest guidelines, policies and concrete actions to provide a service quality [6].

The research work is aimed at improving educational quality through improvement plans, accreditation and certification regarding international standards for the training of Engineering and Accounting students [7].

The methodology used is action-research [8], since a group of people organizes their activities with the aim of improving their conditions and learning from their own experience, this model constitutes a permanent spiral of reflection and action based on the unity between the practice and investigative process and develops from crucial ideas, group decision and commitment to improvement.

For this research, the technique of documentary analysis, the focus group and a survey will be used, which allows establishing differences or correspondences to abstract conclusions. In addition, the accounting and electrical engineering careers were independently analyzed in order to establish indicators to later contrast with the hypothesis.

This type of research constitutes a form of intervention, and the method is mixed since it collects quantitative and qualitative data and uses simultaneously the inductive and deductive scheme. The main sources for the analysis were three:

- 1) Strategic Management, Comprehensive Training and Institutional Support
- 2) The teacher evaluation that students make to their teachers on a semester basis, data that was obtained from the student survey.
- 3) Database of the Office of Academic Records and Archives (ORAA) of the National University of Callao.

In the last decade, quality has become a concept cited by the main public and private companies and services. It has become a goal that is sought in a complete way, since it has been considered in a common way that what has quality meets the customer's expectations.

Quality in general encompasses all the qualities that a product or service has, when its tangible or intangible characteristics satisfy the user's needs. Nowadays, competitiveness is increasingly present in companies and being at international quality standards, so this concept is increasingly cited now by institutions dedicated to education, due to the existing competitiveness in the globalized world, It is necessary to measure and evaluate indicators that reflect the situation of educational quality as an important element, with education being considered the backbone of society.

Many of the decisions made by the authorities of an educational institution are based on the results obtained after the educational process, which will reflect the activities carried out in each of the stages of its development [9].

Admission to the unit, the educational process itself, the resources that this unit has, the human potential that participates in this process, the possibilities of development and growth of the student, among many other factors. Each of these factors are measurable through models or contrast with standardized referents [10], [11]. Electrical Engineering is the career that is responsible for the generation of energy, the transmission of said energy through high, medium and low voltage systems, the use of energy in the various productive sectors and homes, as well as in the points that are required. Within this context, the training of the electrical engineer includes the profile of the graduate, the curricular objectives, the curricular structure and all the components of the curriculum so that it covers the main functions that the graduate has to fulfill, once they complete their studies.

While accounting is the basis on which management decisions are based and, therefore, financial decisions. There is no economic activity outside the procedures applied by accounting science. From the smallest economic activity to the economic transactions of large corporations, accounting science provides a large amount of information, which requires that they be applied by highly trained and updated public accounting professionals, as mentioned above, three sources of information were considered that allowed to find the indicators of academic management, the students' perception of their respective teachers and the data found with the Academic Information Program. For this, the information was collected independently, for each academic unit, to later analyze and verify the congruences and divergences of each of them.

3. Results

In accordance with the provisions of the survey survey plan, data collection was carried out in each of the aforementioned estates. To analyze the fluctuation of the weighted averages of both careers, data from 10 years (1995-2005) were taken. It can be seen that in both careers the weighted averages increased slightly, the highest being that of the Faculty of Accounting Sciences (FCC), it is striking that in 2000, although it is true that the Faculty of Electrical Engineering and Electronics (FIEE) increased slightly and the FCC maintained its average, there was a kind of notorious break, since from that date on, FCC maintains and raises its average while the FIEE maintains it and then drops slightly. The weighted average, although it is approved by the FCC, this approval is with the minimum mark that reflects that the FCC students have, in this analysis, better performance than the FIEE, with their grade being disapproving.

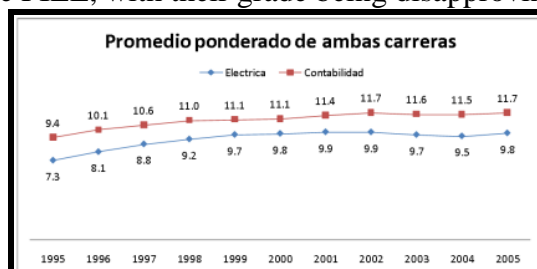


Fig. 3. Weighted average (WA) of the FCC and the FIEE 1995-2005.

A. Variables and Indicators

Found to Establish Internal Efficiency of Students The variables considered throughout the research work are:

- 1) Institutional Context
- 2) Academic Aspect
- 3) Human Potential
- 4) Infrastructure

The indicators considered to establish the internal efficiency of the students were the following:

- 1) Regulations, Policies and Welfare Programs

- 2) Curriculum
- 3) Teaching-Learning Process
- 4) University Extension and Social Projection
- 5) Students
- 6) Teachers
- 7) Administrative Staff
- 8) Libraries
- 9) Laboratories and Other Similar Institutions
- 10) Environments for Class Preparation

Each of these variables and indicators have been reflected in all the working documents, so that they are related to the professional training of the Public Accountant and the Electrical Engineer, in the analysis of each one of them, the hypothetical aspects raised in The present research work. It should be noted that the establishment of the variables and the indicators considered was analyzed very carefully from the proposals made by the various models of educational quality, either for continuous improvement or accreditation purposes. The lack of an adequate organizational culture affects the internal efficiency of the students of both majors, not worrying about improving their performance.

The didactic aspects in both faculties weaken the internal efficiency of the students, being in some way surpassed in the FCC for having all its classrooms implemented with multimedia. Motivation, values and principles are important factors in the internal efficiency of students, something that is not being adequately developed in any of the professional careers under study. The lack of orientation towards research negatively influences the internal efficiency of students in both careers, leaving aside that they can be more analytical and reflective. The internal efficiency of the FCC students is strengthened with a better infrastructure that can be considered as an added value in them while the internal efficiency of the FIEE students does not have this strength, being compensated with the laboratories of the faculty.

4. Conclusions

At the end of this research work, the following main conclusions have been abstracted:

- 1) The indicators were established for the purposes of evaluation and improvement of the processes in the Faculty of Accounting Sciences and the Faculty of Electrical and Electronic Engineering.
- 2) The various indicators that dimension educational quality were analyzed, establishing internal efficiency and the relationship of students from the Faculty of Accounting Sciences and the Faculty of Electrical and Electronic Engineering.
- 3) Lack, in both faculties, to improve the organizational culture, promote motivation, values and principles to achieve internal efficiency of students.
- 4) The didactic aspects in both faculties are affecting the internal efficiency of the students.
- 5) The lack of orientation towards research negatively influences the internal efficiency of students of both careers, leaving aside that they can be more analytical and reflective.

- 6) The internal efficiency of the students of the Faculty of Accounting Sciences is strengthened with a better infrastructure that can be considered as an added value in them while the internal efficiency of the students of the Faculty of Electrical and Electronic engineering does not have this strength being compensated with the faculty laboratories.

5. Recomendaciones

- 1) That educational processes are implemented in all universities with their respective indicators for improvement purposes, in order to see continuous improvement in each program.
- 2) Prepare an action plan that helps improve the organizational climate in national universities in order to work together and in harmony.

- Perspectives of Work Continuity

- 1) It is necessary to extend this work to analyze the other careers in the same aspects, since it would give a better vision of the situation in which each professional career is found.
- 2) Likewise, it is necessary to develop a study of the behavior of the weighted average in all races since historically there were large breaks or abnormal fluctuations.

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