







PROCEDURES MANUAL OF THE QUALITY MANAGEMENT SYSTEM BY PROCESSES IN A UNIVERSITY

MANUAL DE PROCEDIMIENTOS DEL SISTEMA DE GESTIÓN DE LA CALIDAD POR PROCESOS EN UNA UNIVERSIDAD

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Abstract

The quality management systems in higher education based on the ISO 9001:2015 standard, integrated with the requirements of Internal Control and the National Accreditation Board constitutes a Strategy adopted by Higher School of State and Government Cadres (ESCEG) for the fulfillment of its mission. The article aims to present the design of the Procedures Manual of the ESCEG Quality Management System, based on four stages, referring to the theoretical referential framework, the integral diagnosis with a focus on processes and risks, the design of the Manual, aligned to the strategic objectives, compliance with regulations and requirements, as well as the control and improvement of the procedures for the fulfillment of the goals of the indicators outlined in the strategic projection of the university.

Keywords: quality management system, procedures manual, processes, risks, quality accreditation

Resumen

Los sistemas de gestión de la calidad en la educación superior basados en la norma ISO 9001:2015, integrados a los requerimientos del Control Interno y de la Junta de Acreditación Nacional constituye una Estrategia adoptada por la Escuela Superior de Cuadros del Estado y del Gobierno (ESCEG) para el cumplimiento de su misión. El artículo tiene como objetivo exponer el diseño del Manual de Procedimientos del Sistema de Gestión de la Calidad de la ESCEG, basado en cuatro etapas, referidas al marco teórico referencial, el diagnóstico integral con enfoque a procesos y a riesgos, el diseño del Manual, alineado a los objetivos estratégicos, el cumplimiento de las normativas y requerimientos, así como el control y la mejora de los procedimientos para el cumplimiento de las metas de los indicadores trazados en la proyección estratégica de la universidad.

Palabras clave: sistema de gestión de la calidad, manual de procedimientos, procesos, riesgos, acreditación de la calidad

Introduction

Quality management systems favor obtaining innovations¹ from strategy to processes.² Likewise, organizations must have robust process documentation that contributes to knowledge management and an effective work culture, becoming a powerful tool management and improvement.³ In this sense, the manuals constitute an ideal tool to capture the specific activities within an organization in which policies, legal aspects, procedures and controls are specified in an effective and efficient manner,^{4,5} according to the needs of the institution and the economic and social transformation that current times require.

The management of policies with an innovation approach^{1,6,7} have also been present in Cuban higher education⁸ with the formulation and implementation of innovation strategies in university academic processes and their environment.⁹ At the same time, the university is composed by a system of interrelated processes, which demand an integrated, strategic and quality-oriented management,¹⁰ to achieve excellence and the satisfaction of society's demands. To this end, the process approach of ISO 9001 of 2015¹¹ contributes to internal control and accreditation,¹² as established by the Accreditation Board.¹³

The Higher School of State and Government Cadres (ESCEG) has as its mission the improvement of cadres in public and business administration, as well as the methodological attention to the remaining institutions of the country^{14,15} and for this it directs its management to the fulfillment of the requirements of the National Accreditation Board (JAN) and in the updating of the economic model of socialist social development of the country.^{16,17} With the strategic prospective of the 2017-2021 of the ESCEG, it was possible to know that the variable of quality management system (QMS) of the internal control is significant, moving from autonomous to liaison in the future,¹⁸ which was ratified in the current strategic cycle of 2021-2026. This article aims to show the design of the Procedures Manual of the Quality Management System with a focus on processes and regulations to contribute to the fulfillment of the mission of the Higher School of State and Government Cadres, the strategic objectives with higher standards of quality, the requirements of the Institutional Evaluation and Internal Control.

Materials and methods

The research methods used are theoretical, empirical and statistical.

- Theoretical methods. They refer to the historical-logical analysis to learn about quality management, procedure manuals, their design and projections. The analysis and synthesis allow processing the information collected from various investigative and diagnostic sources until reaching the conclusions about the quality management system of the university. The Deming cycle of Plan-Do-Check-Act is used in the design and implementation of the Procedures Manual.
- Empirical methods. Checklists, information matrices, interviews and surveys of ESCEG managers and experts, statistical analysis, process and risk analysis and other measurement and experimentation instruments are applied, which will allow the diagnosis to be deepened. The research methods address the four stages described in **Figure 1**.

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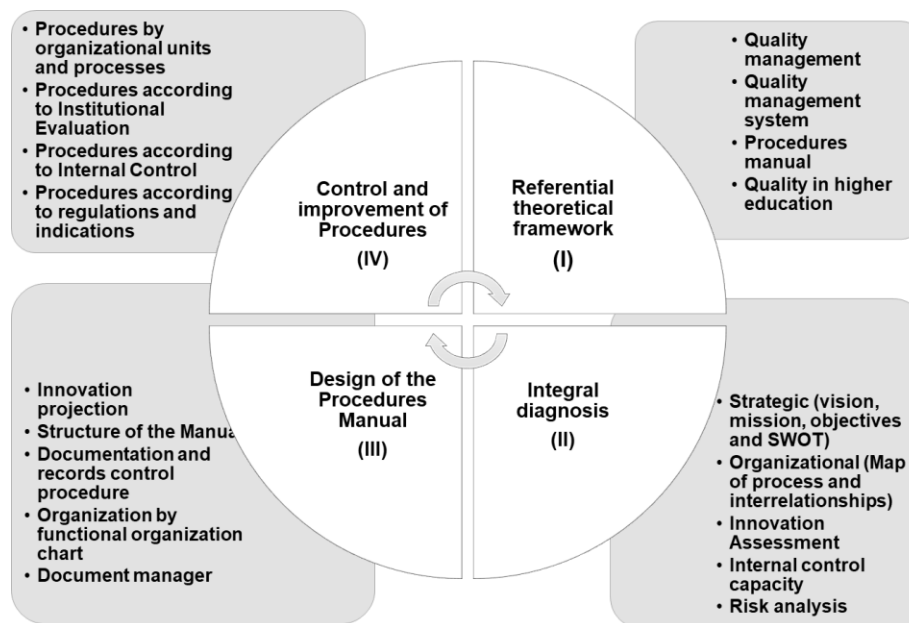


Figure 1. Diagnostic procedure of the QMS of the ESCEG

Source: self-made

Results and discussion

Stage 1. Theoretical referential framework of the Quality Management System and the Procedures Manual

Management can be defined as the set of activities, such as anticipating, planning, organizing, commanding, coordinating, leading and controlling to achieve a specific purpose or achieve objectives. It implies deploying planning processes considering the stages, goals, resources, the plan, your

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organization, as well as the control, monitoring and solution of problems with cycles towards continuous improvement. Management must be guided by leadership, vision of the future and strategies that allow introducing changes. It involves the management of human, material, financial and information resources to ensure compliance with the plan. Process management implies a transversal and integral vision of the organization¹⁹ that allows to satisfy the needs and facilitates an explicit visualization of the value chain, as well as a greater efficiency of the processes, since the client is closer to the operational process²⁰; constitutes the commitment assumed by the organization to satisfy the needs and expectations of society and customers through the value chain.²¹

The fundamental principles of quality management are: customer focus and processes, leadership, people's commitment, continuous improvement, evidence-based decision-making and relationship management.¹¹ The process approach in a quality management system allows: a) understanding and consistency in meeting the requirements; b) the consideration of the processes in terms of added value; c) achieving effective performance of the process; d) improvement of processes based on the evaluation of data and information. On the other hand, the new version of ISO 9001:2015 brings with it major conceptual changes and has been designed under a high-level structure, which will gradually adopt the different existing management system standards to facilitate integration processes.^{22,23}

Quality goes through all the processes of development, design, production, sale and maintenance of products or services.²⁴ For higher education, quality has multiple interpretations and is vital in decision making. Quality can be assumed as excellence if it is interpreted under the Aristotelian conception that it is not a point to be reached, it is a habit, a lifestyle.²⁵ Universities have adopted an approach focused on quality management to achieve greater efficiency and effectiveness in the direction of university processes and their continuous improvement,^{26,27} as well as the integration of their substantive processes.²⁸ The design and implementation of quality management systems in each Higher Education Institution (IES) constitutes a priority in the Ministry of Higher Education of Cuba (MES) with the integration of processes in universities.¹²

Several Cuban universities have designed and implemented their quality management system aligned to the processes²⁹ with the ISO 9001:2015 standard^{30,31} contributing to comprehensive performance evaluation.¹⁰ A trend in the quality management systems of universities is its alignment with the requirements of quality accreditation.^{9,30,32,33} In this sense, the Regulation of the Higher Education Evaluation and Accreditation System (SEAES) of the Republic of Cuba is the regulation that regulates all the procedures that are implemented for self-evaluation, external evaluation, the accreditation and certification of the quality of the university careers of the academic postgraduate programs and of the IES through the different subsystems that compose it.⁹

A Quality Management System (QMS) comprises activities through which the organization identifies its objectives and determines the processes and resources required to achieve the desired results,¹¹ in accordance with the quality strategy of each organization and the quality indicators of processes to meet the needs, expectations and requirements of interested parties. In this sense, it is considered that the QMS stands as an effective management tool that allows the achievement of products with high quality standards and oriented to the satisfaction of the needs of the interested parties.

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The application of management systems based on international standards has been widely accepted and proliferated as a way to meet customer requirements and improve the performance of organizations^{10,34} that have evolved into a high-level structure^{11,22} in search of integration,^{35,36} compliance with regulations³⁷ and insertion into global value chains.³⁸

In the quality management system, the documentation of routines Organizational processes in Standard Operating Procedures guarantee that knowledge can be reproduced.³⁹ Thus, the design and implementation of a documentary model in accordance with the regulations⁴⁰ presupposes the preparation of the Manual of procedures aligned with the fulfillment of the organizational objectives and the quality requirements of the processes, customers and stakeholders. A manual must gather specific, ordered, systematic, detailed⁴ and certified information on the nature and purposes of a set of procedures for the organization's operations and their respective flowcharts,⁴¹ it guarantees the reduction of errors,⁴² it is a formal expression of the information and instructions and are a communication tool.

The procedures manuals include a sequence of activities of the processes that are intended to be systematized in the quality management system with an integrated and risk approach. It is also a useful tool for planning, measuring, evaluating and controlling processes⁴³ and contributing to institutional objectives.⁴ Processes are defined as any activity that uses resources that are managed in order to allow input elements to be transformed into results¹¹ by adding value and can involve different areas.⁴⁴ Resources include personnel, finances, facilities, equipment, technologies, techniques and methods.⁴⁵ Thus, the adoption of a process approach in the Quality management can be achieved more easily through the implementation of a Procedures Manual, allowing to clearly and objectively establish the delimitation of responsibilities in each of the processes, establish the competencies for the proper performance of the processes and documented information, all of which facilitate decision making.

On the other hand, the Comptroller General of the Republic highlights the importance of procedures, as a work tool, to document the processes carried out by organizations and strengthen their internal control system. It defines them as a specific way of carrying out an activity, which must be contained in approved documents, and includes the object and scope of an activity, what must be done and who must do it, when, where and how it must be done, what materials, equipment and documents should be used and how it should be controlled and recorded. The Self-Control Guide issued by said body recognizes the Procedures Manual, Operating Manual and Organic Regulations as the main sources of information.⁴⁶

Stage 2. Integral diagnosis of the ESCEG Quality Management System

The integral diagnosis allows evaluating the situation of the ESCEG, regarding the effective fulfillment of the mission.¹⁵ For this, the institution must have, execute, preserve and work on the continuous improvement of the quality management system, including the necessary processes and their interactions, in accordance with the requirements established for each case. Correspondingly, the center's process map must be updated and established, which allows visualizing the main elements of the quality management system and the interrelationships between different areas of the organization. The necessary resources for each area, the sequence and interaction of the activities and the indicators for the adequate follow-up, measurement and analysis of the processes must also be indicated.

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For the diagnosis of the QMS in the ESCEG, different tools and surveys were applied to a sample of 10 managers surveyed. Through the strategic diagnosis, an evaluation was made regarding the fulfillment of the mission, vision, functions and strategic objectives. In this sense, it was verified that the ESCEG is a leading university in overcoming the cadres and their reserves in Public Administration (PA) and Business Administration and Management (BAM) and among its functions the following stand out: guarantee the educational teaching process; methodological advice to the rest of the authorized institutions in this overcoming; the research; systematic evaluation of the impact of overcoming cadres; the development of educational technologies with the intensive use of information technology and communications and national and international collaboration, through agreements and memorandums.

On the one hand, the systematic link of the ESCEG as an academy with the directorates of the public administration and the country's business system also favors the processes of generating innovation as established in the triple helix models.⁴⁷ In turn, the strategic objectives of the ESCEG are aimed at responding to the mission in the short, medium and long term, raising the impact due to the results of the applications of the works defended by the cadres, oriented towards innovation.^{18,48}

On the other hand, yes the interrelation of all the processes was studied through the organizational diagnosis, which made it possible to analyze the strengths, weaknesses, threats and opportunities (SWOT) of the organization. In turn, the diagnosis of internal control capacity was developed with the application of the procedure for risk management and the diagnosis of innovation.

The diagnosis with a comprehensive approach allows the generation of alternative solutions and innovations and their projection⁴⁹ according to the impact on the analyzed effect, the objectives, the risks, the incidence in the elimination or reduction of the root sub-causes, the analysis of the information internal and external evaluation and good management practices for its deployment.¹⁵ The ESCEG applied the Integrated Innovation Assessment Guide¹ made up of various surveys, such as the innovation survey with 58 variables, the business innovation test and the the organization that learns.^{1,48}

Figure 2 shows some of the results of the processing of two of the applied surveys.

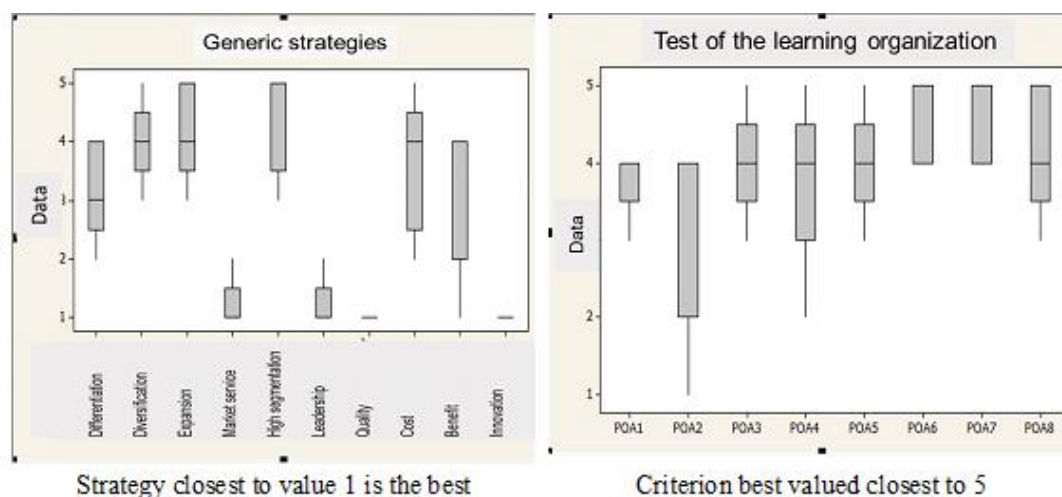


Figure 2. Boxplot of generic strategies and the learning organization of ESCEG
Source: self made

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The main results of the survey processing were:

- Quality and innovation strategies are the most relevant, followed by leadership.
- The objectives of the most important innovative activity are: quality, consumption of energy and materials, improvement of working conditions and flexibility.
- The most important sources of innovative ideas are: internal Research and Development (R&D) activities, universities, higher organization and senior management. They are followed by services, research centers, training and training, and events.
- The most relevant factors that hinder innovation are risks, legislation and standards, resistance to change and difficulty in closing the R+D+i cycle.
- The entity is innovative with 70% of the criteria that are met with the best results in the strategy (100%) and its deployment (75%), culture of innovation (75%), innovation in the value chain and results of innovation (both 50%).
- The learning organization test shows that the center systematically assesses its knowledge needs and develops plans, facilitates experimentation to learn, and stimulates its abilities to generate, acquire, and apply knowledge, learning with the learning processes of other organizations.

The ESCEG's QMS takes into account the process map in **Figure 3**.

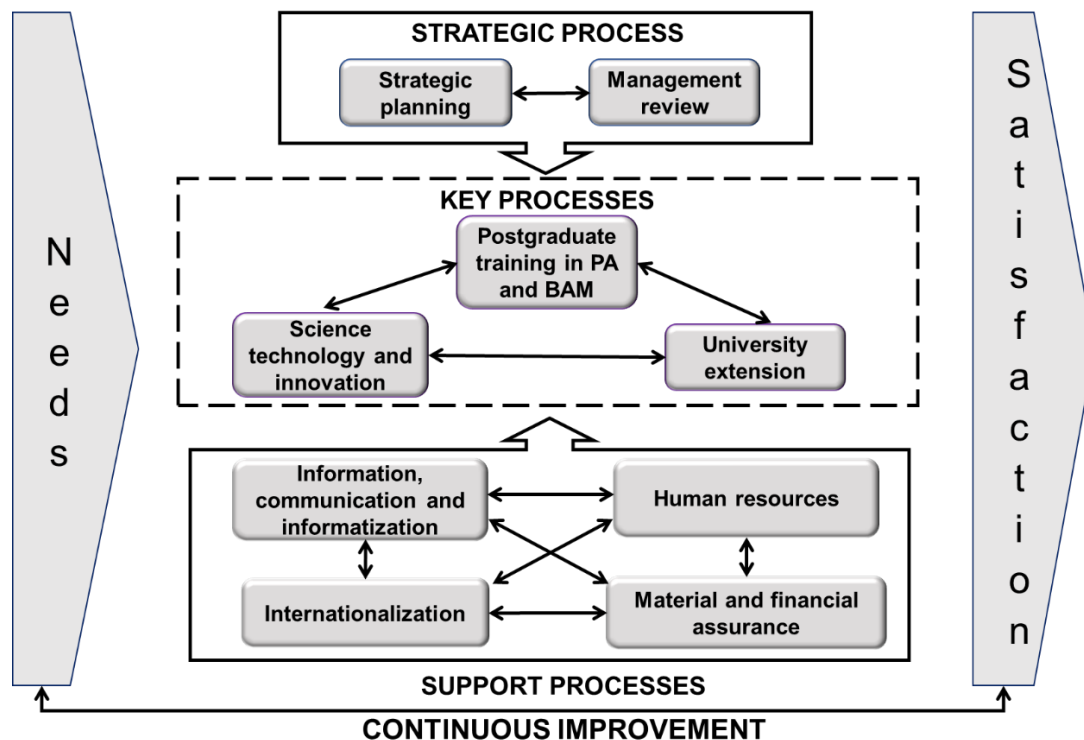


Figure 3. ESCEG process map
Source: self-made

Another tool applied is the matrix of Weaknesses, Threats, Strengths, Opportunities (SWOT) weighted with the levels of impact: high (3), medium (2), low (1) and no relation (0) according to the influence of the variables. in meeting strategic objectives. The sum with the greatest weight corresponds to the

quadrant of offensive strategies, in which strengths and opportunities should be maximized. Among the strategies identified are the improvement of the QMS, the projection and organization of scientific research and innovation.

The Balanced Scorecard⁵⁰ has extended its use from the business system^{51,52} to the public sector,^{53,54} adjusting the perspectives and the strategic map to the effectiveness in fulfilling the mission^{55,56} generalized to universities.¹² Thus, in correspondence with the strategic projection, the analysis of the strategic objectives of the organization was carried out, by perspectives of the Balanced Scorecard (BSC), according to the indicators, measurement criteria and their evaluation. With the board of indicators identified by the BSC perspectives, the performance of the center according to the BSC was evaluated and analyzed, obtaining a high organizational performance index of 0.94, being between 0.7 and 1, which is shown below.

$$\begin{aligned} \text{IDO} &= \Sigma (a * \text{IDPE} + b * \text{IDPC} + c * \text{IDPI} + d * \text{IDFC}) & \text{IDPE: Financial Perspective Index} \\ \text{IDO} &= \Sigma (0.25 * 0.76 + 0.25 * 1.00 + 0.25 * 1.00 + 0.25 * 1.00) & \text{IDPC: Customer perspective index} \\ & & \text{(graduate cadres)} \\ \text{IDO} &= 0.94 & \text{IDPI: Internal process index} \\ & & \text{IDFC: Formation and growth index} \end{aligned}$$

On the other hand, risk is a measure of the magnitude of damage in the face of a dangerous situation. According to the NC ISO 31 000:2018 standard, risk is defined as the effect of uncertainty on the objectives.⁵⁷ It can also be defined as the combination of the probability of the occurrence of an event and its negative consequences; Thus, risk management focuses on forecasting and evaluating them, together with the identification of actions to avoid them or minimize their impact.³⁸ Undesired effects and events (risks) may occur in the organization's processes, constituting obstacles to the achievement of the objectives that the organization intends to achieve in terms of effectiveness and efficiency.⁵⁸ Taking into account the risk management method,⁵⁸ a risk diagnosis was made in the ESCEG to the nine (9) processes that make up the risk map. QMS processes:

1. Identification. Risks are identified in each of the processes.
2. Analysis. The possible causes (internal and external) that can cause the occurrence of these risks were determined.
3. Measurement. The risk value (VaR) was determined using a mathematical equation, using the probability of risk occurrence and its economic-financial impact.
4. Evaluation. Based on the risk values per process, these are evaluated according to the Extreme, High, Moderate, Low or Trivial categories.

18 risks and 20 causes were identified. The process that showed the most risks was Information, communication and computerization, with 6, due to its necessary and significant influence on the performance of all processes.

Although ESCEG is a university, the level of integration of business processes (NISDE)⁵⁹ was measured, generalizing the use of this tool to a unit budgeted for its usefulness. For this, the internal and external relationship matrices were built and the critical and important relationships were determined. The results are observed in **Table 1**.

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Table 1. Results of the external and internal NISDE in the ESCEG

| | Important relationships | Critical relationships | NISDE |
|--------------------|-------------------------|------------------------|-------|
| Internal relations | 19 | 5 | 0.80 |
| External relations | 36 | 12 | 0.75 |

Source: self-made

The Internal NISDE (with the 9 processes) has a value of 80%, which is adequate. Although it was observed that it was slightly affected in processes P6 (Information, communication and computerization) and P9 (Material and financial assurance). The External NISDE yielded a value of 75%, being able to appreciate that the relationship with service and input providers is considered adequate, which contribute greatly to the ESCEG fulfilling its mission, as services are outsourced.

Stage 3. Design of the ESCEG Procedures Manual

Innovation is one of the most important strategies for the institution. Innovation depends more and more on a better use of knowledge and on the links between the different actors.⁶⁰ The scope of innovation not only refers to radical type innovations, but also to incremental ones, these being the ones with the highest percentage. occupy.⁶¹ Innovation is defined as the ability of organizations to transform ideas into value,^{62,63} understood not only as commercial value or the generation of a product to or service, but also as an organizational innovation.

Among the main transformations that have occurred in the ESCEG, which are classified as innovations, we can mention the intensive use of Information and Communication Technologies (ICT) in the teaching process with digital platforms, the Virtual Learning Environment (EVA), the computerization of processes, the methodological preparation of the country's teachers, the generation of capacities in the preparation of State and Government cadres and municipalities with various organizational forms, as well as international relations activities with the academies and homologous institutes of the People's Republic of China (7 institutions), the Republic of Belarus, the Russian Federation and the Socialist Republic of Vietnam. The accreditation of excellence by the National Accreditation Board of the specialties in Public Administration and Business Administration and Management in 2020 stands out. It is commendable that in the first eleven years of creating the ESCEG, in 2022 they had graduated from the seven Postgraduate editions of the Specialties in Public Administration and Business Administration and Management a total of 259 cadres, in the 25 editions of the Diplomas, 1816 graduates are reached and more than 6000 cadres graduate in seminars, training, workshops and courses.

At the same time, organizational innovations are prioritized, such as the Integrated Quality Management System, which responds to the demands and needs of the preparation and improvement of the country's cadres and the methodological attention of teachers, according to current norms and regulations. , to achieve higher standards in the fulfillment of its mission, for which it is necessary to design the Procedures Manual.

The ESCEG has the governing regulatory documents that regulate the internal functioning of the center: the Organic Regulation, which aims to establish the organization, structure, composition and operation of the organization, the Internal Functioning Manual, which specifies the specific organizational

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elements that they are more closely linked to the immediacy demanded by the management process; In addition, the workers have defined the obligations and attributions of the positions. At present, the organizational units and areas have identified a total of 102 work procedures; and of these, there are 93 approved procedures and 9 pending development, or approval.

In this sense, it was required to design the Manual of Procedures to group and organize the 102 procedures, establish a guide for the elaboration of the procedures and raise the legal culture with the study, analysis and training in the norms, regulations and approved procedures, all which will contribute directly to the effective functioning of the Quality Management System and to the fulfillment of the center's mission.

In order to standardize the preparation of procedures by the organizational units and areas of the ESCEG, and in accordance with the provisions of the ISO 9001:2015 standard, the "General procedure for the control of documentation and records" was prepared. Their organization is shown in **Figure 4**

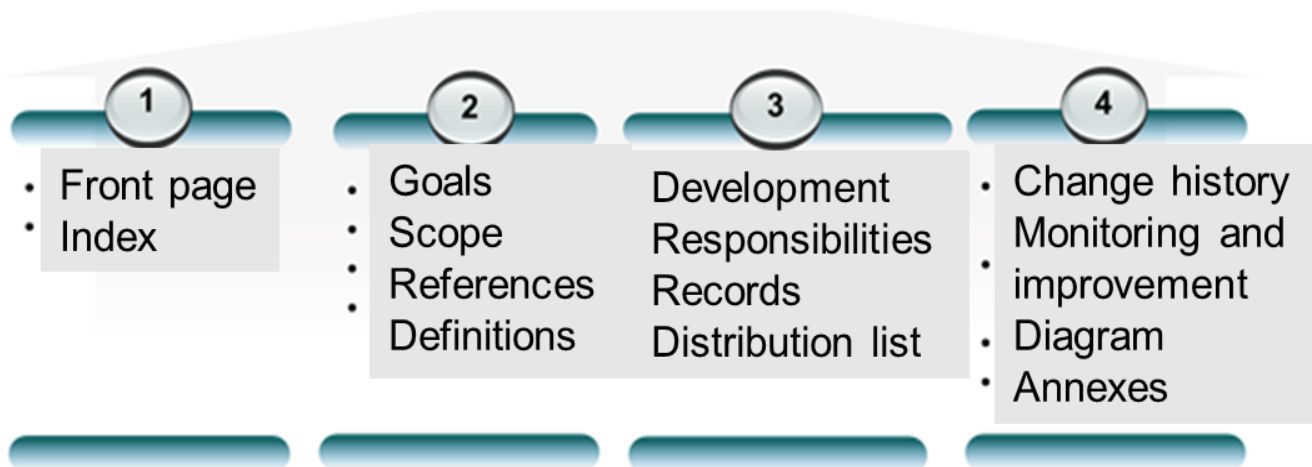


Figure 4. Organization of the general procedure
Source: self-made

The ESCEG stands out for the studies and research it carries out on the PA and BAM with the preparation of the charts and the measurement of the impact. As a Cuban university, its management system is oriented towards compliance with the requirements of the National Accreditation Board (JAN) and the annual and five-year objectives established for higher education, in relation to the mission of the institution. Consequently, it systematically readjusts its study programs, in relation to the updating of the Cuban economic and social model of socialist development of the country, derived from the agreements of the Party congresses. It also takes into account the requirements established in Decree-Law 13 "Work System with State and Government Cadres and their Reserves"⁶⁴ and Presidential Decree No. 208 "Regulation of the Work System with State and Government Cadres". Government and its Reserves"⁶⁵, as well as the legal policies and regulations that should be the domain of the country's cadres.

That is why it is vital that the institution properly organize, order, control and unify the processes it develops, allowing its adaptation in correspondence with its real needs, based on the design and implementation of a Procedures Manual. All this favors a better individual, collective and organizational

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performance,¹⁰ satisfying the needs in the jobs, depending on the skills and achieving greater motivation, commitment and quality in the work that is carried out. In turn, it will facilitate the development of the organization's processes, enabling better coordination between areas, improvement of management, administrative control; and, consequently, higher standards will be achieved in the fulfillment of the mission.

It is necessary for the ESCEG to adapt the requirements and guidelines of the ISO 9001:2015 standard to its uniqueness, magnitude, activities, instruments and organizational structure and processes. This adaptation of ISO 9001:2015 for any type of organization requires the preparation of a series of institutional documents that must be consistent with each other and with the vision, mission, values, objectives and goals from which the organization is defined from greater to lesser degree of generality.⁵ In this sense, the institutional quality policy and the quality objectives constitute statements that mark a course, through which the daily path must be built to achieve the proposed vision.

Through the Manual of Procedures, an attempt is made to establish the way in which a specific activity or process should be carried out, in accordance with what is regulated at the national, organizational and institutional level, and, secondly, it aspires to improve efficiency and effectiveness, while it provides the complete data of the current method to be followed, which allows a better planning and execution of the institution's processes. In turn, as it includes the operation of all the organizational units and work areas of the center, it provides a documentary basis for internal or external audits, and systematic evaluation and internal control. It also allows new workers to be trained in carrying out the activities and offers the possibility of knowing if they are being carried out correctly or not. In this sense, the manual is organized as follows:

- The First Section contains the header, index, introduction where a brief reference to the content of the Manual is made;
- The Second Section lists the objectives of the Manual, where it is specified why this Manual has been prepared; its scope, the general legislative references that were taken into account for its preparation and the glossary of terms;
- The Third Section contains the general procedure for the preparation, uniformity and systematic updating of these: "Procedure for the Control of Documentation and Records of the ESCEG", which establishes the general parameters for the preparation and management of documents and records generated, the rest of the general procedures and the procedures developed by the organizational units and work areas of the center;
- The Fourth Section contains the ESCEG Procedures organized by organizational units according to the Functional Organization Chart;
- The Fifth Section contains the Control and improvement of ESCEG Procedures, with the procedure for the analysis of the Manual in relation to processes, regulations, institutional self-assessment guides and strategic audit, as well as the frequency of evaluation.

The ESCEG has a Document Manager, which is a centralized platform that allows the digital storage of documents that must be of general knowledge and those that must be used by organizational units and work areas for their internal operation. The Document Manager p allows you to have all the files ordered and categorized in the same place, allowing network users, with access permissions, to access the information that is required at any time. It also organizes the institution's information, and contributes to

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its dissemination and conservation. The approved procedures are filed in the Document Manager with the aim of promoting the proper use of ICT, as well as better and easy access. (See **Figure 5**).

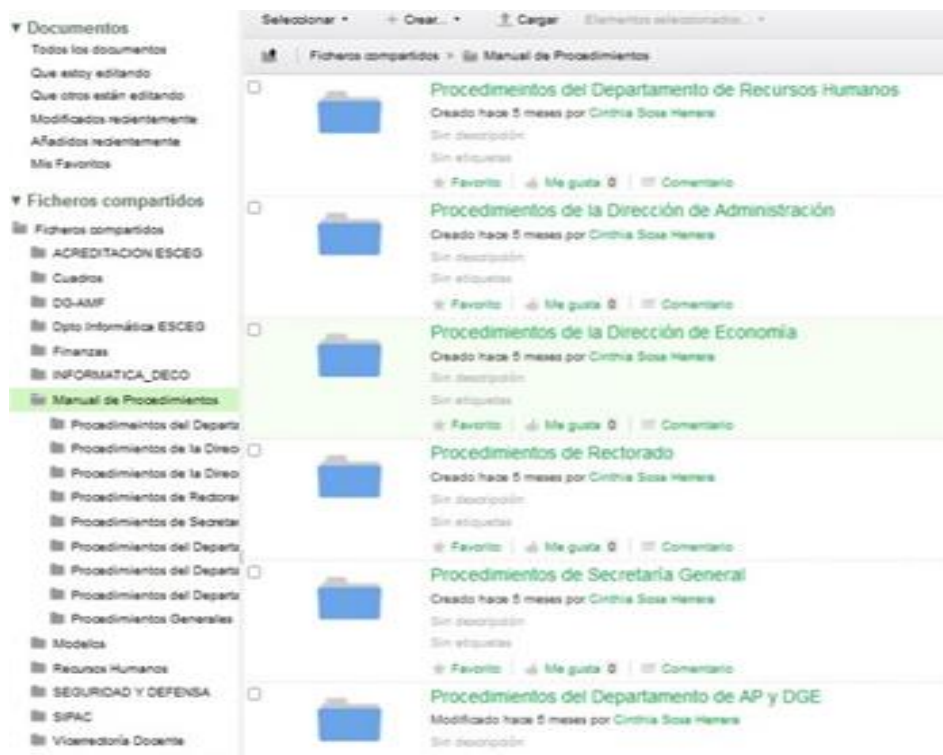


Figure 5. View of the ESCEG Document Manager
Source: self-made

Stage 4. Control and improvement of ESCEG procedures

The procedures of the ESCEG will be reviewed monthly and a Report on the update of the Manual will be presented to the Board of Directors of the institution, which will make it possible to identify new work procedures or update current ones. This Procedures Manual will be updated:

1. Before changes in the structure or staff of the ESCEG.
2. From changes in the strategic projection of the institution.
3. When it is necessary to regulate an activity or process by means of the elaboration of a work procedure, due to indications from higher bodies or bodies.
4. In the event of changes or modifications to the Institutional Self-Assessment Guide of the National Accreditation Board, from which the need to prepare or update work procedures arises.
5. When self-controls are carried out on compliance with the Components of the Self-control Guide, issued by the Comptroller General of the Republic and this results in the preparation or updating of work procedures.
6. Before legislative changes.
7. As part of the improvement of the ESCEG Quality Management System.

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8. Other causes related to the fulfillment of the mission of the ESCEG and the participation in working groups or commissions, among others.

As part of the control of the ESCEG procedures, a comparative analysis was carried out for the period between January-December 2020 and January-November 2022. In 2020, the organizational units and work areas of the institution had identified a total of 83 work procedures. Of these, 56.6% of the total (47) were approved and in execution; while 16.8% (14) of the procedures were pending approval; 12% (10) were being prepared and 14.4% (12) were pending preparation.

However, of the 47 (56.6%) procedures approved, taking into account that at the end of 2019 and during 2020 the country was being perfected, from the implementation of the monetary reordering and the entry into force Due to numerous regulations, which in some way affected the functioning of the country and, therefore, the institution, it was necessary to modify and adjust to the new regulations 76.5% (36) procedures that were in force at that time, throughout which continued a process of identification and improvement of school procedures.

All of which contributed to the fact that in November 2022 the ESCEG had identified 102 work procedures by the organizational units and areas of the ESCEG, 19 procedures more than in the period being compared. Of which, 91% (93) of the procedures are already updated and approved, while 3.9% (4) are pending approval, 0.9% (1) in preparation and 3, 9% (4) pending preparation. **Table 2** summarizes the situation of the procedures by organizational unit and work area in the ESCEG. In the Rector's Office, various procedures have been grouped, such as strategic planning, management review, international relations, attention to authorized institutions for the preparation of cadres, cadre section and management position.

Table 2. Assessment of the procedures in the ESCEG until November 2022

| No. | Organizational unit | Identified | Approved | Pending approval | In preparation | Pending preparation |
|-----|---|------------|-----------|------------------|----------------|---------------------|
| 1. | Rector ship | 16 | 12 | 2 | 1 | 1 |
| 2. | General Secretary | 9 | 5 | 2 | - | 2 |
| 3. | Public and Business Administration Study Center | 1 | 1 | = | - | = |
| 4. | Administration Directorate | 8 | 8 | - | - | - |
| 5. | Economy Department | 12 | 12 | - | - | - |
| 6. | HR department | 24 | 23 | - | - | 1 |
| 7. | PA and BAM Teaching Departments | 12 | 12 | - | - | - |
| 8. | ICT Department | 14 | 14 | - | - | - |
| 9. | Computer Science Teaching Department | 6 | 6 | - | - | - |
| | Total | 102 | 93 | 4 | 1 | 4 |

Source: self-made

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Another analysis carried out of the procedures in relation to the processes that are taxed allowed us to ascertain that of the 9 established processes, 88.8% (8 processes) have procedures that are taxed on the effective fulfillment of their objectives and cover the main established regulations. The key process of University Extension does not have any identified procedure and that of Science, Technology and Innovation has only one. The largest number of procedures is found in support processes, in human resources (24) and material and financial assurance (21).

It is necessary to carry out a reanalysis of the procedures identified to date, by the organizational units and work areas of the ESCEG, with the aim of making a survey of those procedures that are missing, in the aforementioned key processes and others that may arise from the implementation of new regulations that affect the operation of the center and the fulfillment of its objectives and goals.

Taking into account the SEA-IES Evaluation Guide for the institutional evaluation of the National Accreditation Board (JAN), an analysis was carried out on the presence in the 102 ESCEG Procedures of the requirements established in this document (See **Table 3**). .

Tabla 3. New Procedures according to Institutional Evaluation requirements

| Variables | Strategic | Key | Support | Total |
|--|------------------|------------|----------------|--------------|
| 1. Institutional context and overall relevance | | 2 | | 2 |
| 2. Human resources | | | | 0 |
| 3. Postgraduate training | | | | 0 |
| 4. Research and postgraduate training | | 4 | | 4 |
| 5. Infrastructure | | | 3 | 3 |
| 6. Economic and social impact | 1 | 2 | | 3 |
| Total | 1 | 8 | 3 | 12 |

Source: self-made

Going deeper into the analysis of the procedures not elaborated, it was possible to corroborate that the related activities are executed according to the indications issued by the MES and the ESCEG, but even so, it is decided that the elaboration of said procedures be projected so that the knowledge that is possessed be shared. For example, there are guides for: impact workshops, graduate satisfaction surveys, collaboration agreements, virtual learning platforms, doctoral training, local development and contribution to strategic sectors.

Parallel to the analysis carried out previously, an evaluation of the procedures identified to date in the School was carried out, with respect to the components established in the Self-control Guide issued by the Comptroller General of the Republic, with the objective of verifying if the They themselves respond to the components provided in the guide, all of which is stated in a comparative table (See **Table 4**).

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Table 4. New Procedures according to Internal Control requirements

| Guide | Processes | | | | | | Total | |
|----------------------------------|-----------|----------|-----------|----------|-----------|-----------|------------|-----------|
| | Strategic | | Key | | Support | | Current | New |
| | Current | New | Current | New | Current | New | | |
| 1.Control environment | 4 | 2 | 21 | 0 | 54 | 5 | 79 | 7 |
| 2.Risk Management and Prevention | | 1 | | | | | 0 | 1 |
| 3.Control activities | | | | | 17 | 12 | 17 | 12 |
| 4.Information and communication | | | 1 | | 3 | 4 | 4 | 4 |
| 5.Supervision and monitoring | 2 | | | | | | 2 | 0 |
| Total | 6 | 3 | 22 | 0 | 74 | 21 | 102 | 24 |

Source: self-made

The evaluation of the procedures on Internal Control yielded the following results:

- Of the 102 work procedures identified in the ESCEG, 79 are taxed on the Control Environment Component followed by control activities, being the components that have the most requirements to be met, which favors the implementation of Internal Control.
- Of the 102 work procedures identified, 6 respond to strategic processes, 22 to key processes and 74 to support processes.
- 24 new procedures were identified in which the majority, that is, 12, belong to the Control Activities Component and of the new 21 respond to support processes, 3 to strategic and none to key processes.

Other procedures were identified, for their elaboration, which respond to the provisions of different regulations and the Internal Operation Manual, issued by the Ministry of Higher Education, where the procedures that impact the operation of the Central Organization and the affiliated entities are established and subordinate companies that are also contained in the requirements of the Internal Self-control Guide, referring to investors, the information and communication system and the requests in the provision of services, among others, which add up to a total of 5 new procedures to be prepared by the organizational units of the institution.

With the analyzes carried out, a procedure improvement plan is projected that will contribute to standardize the processes, once the 41 new procedures identified are prepared and approved, in addition to the 9 pending approval of the 102 that had already been identified, to With this, comply with the established regulations and strengthen the Quality Management System integrated into Internal Control and Institutional Evaluation, which will promote the achievement of higher quality standards in the fulfillment of the mission at ESCEG.

Conclusions

Establishing a quality management system, especially in Cuban Higher Education, allows achieving the objectives and goals efficiently and effectively, for which the procedure manuals are a useful tool that allows describing the functions and responsibilities, processes and activities, in which policies, regulations, procedures, flowcharts, controls, indicators and information records are specified.

A comprehensive organizational, strategic diagnosis (external and internal) with future projection, taking into account opportunities and risks, which deepens the processes according to their classification as strategic, key and support with their interrelationships, which evaluates innovation, learning and the fulfillment of the objectives and indicators of the Balanced Scorecard, constitutes a required stage for the design of the Manual of Procedures in the ESCEG.

The ESCEG Procedures Manual is designed taking into account the characteristics and needs of the organization, the current rules and regulations, the requirements of the National Accreditation Board, Internal Control and the needs of the preparation of cadres with a continuous improvement to meet and achieve superior standards in the fulfillment of its mission.

The ESCEG Procedures Manual constitutes an essential instrument for the planning, execution and effective control of the processes and with the systematic consultation and training of workers, it guarantees its effective implementation taking into account the regulations, legislation and requirements in force and applicable to the institution.

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Conflict of interest

The authors declare that they have no conflicts of interest

Contribution of the authors

- Daylin Rosales Martin: Research, Methodology, Data curation, Visualization, Writing-Original Draft, Writing: review and editing.
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- Ana Gloria Navarro Pentón: Methodology, Supervision, Visualization, Writing: review and edition.
- Cinthia Sosa Herrera: Research, Data curation, Visualization.
- Michelle Perez Acosta: Research, Writing-Original Draft.
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