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# Information And Communication Technologies (ICT) And Educational Quality At The University Francisco De Paula Santander

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**RESÚMEN**

When mentioning different actions that lead to the implementation of strategic planning in the use of ICT for achieving educational quality in the UFPS, it should become a concretion of the practical participation of these entities to try to achieve quality standards in education. In this sense, when it is intended to generate actions that lead to consolidating this proposal, the purpose of the research was to establish how ICT improves quality in higher education and to propose a strategic plan that allows its improvement at the Universidad Francisco de Paula Santander, framed in a feasible, field, descriptive project. With a sample of 13 active teachers in the selected university institution. In addition, the survey technique was applied with a questionnaire-type instrument with response options always, almost always, sometimes, almost never and never. Its items were validated employing expert judgment and its reliability was verified through Cronbach's Alpha statistical formula. Subsequently, the respective analysis of the information was carried out to elaborate on the actions to be proposed for the implementation of strategic planning for the achievement of educational quality at the Universidad Francisco de Paula Santander. The results found to indicate the relevance of strategic planning to stimulate educational quality in the university selected for the research, in addition to pointing out organizational aspects that generate administrative waste, are minimized with the systematic application of strategic planning as a projection to the university community.

Keywords: Strategic planning, ICT, educational quality, Francisco de Paula Santander University.

## INTRODUCTION

Learning models are constantly evolving, especially those of higher education, which are influenced by Information and Communication Technologies and can be face-to-face or virtual, so it is crucial to review and adjust, to ensure the applicant's attention and learning based on the difference, discussion and debate. One of the learning models currently being discussed in Higher Education Institutions is the so-called learning by competencies, which is understood as the learning of skills, aptitudes, and knowledge, that is, what is called competencies.

The generic competencies on which the model is intended to focus, refer to the ability, expertise or aptitude required to adequately exercise a profession, without having to be limited to specific knowledge. Although there are various taxonomies of competencies, probably one of the best known and most widely applied is the one developed by the Tuning Project, which categorizes them into three groups: instrumental, systemic and interpersonal (González & Wagennar, 2006).

The competency-based educational model has been implemented with relative acceptance by academics and control institutions, although questions remain, such as the role of the teacher in the provision of competencies to the student, since he/she is the one who executes the curriculum and directs the process that is part of the model, and the use of information and communication technologies, with which learning is mediated (González & Wagennar, 2003).

It is well known that ICTs provide an important value in learning, since they create scenarios where information can be created, processed and disseminated, and that they have overcome some barriers that prevented the acquisition of knowledge, and have allowed the development of communication skills among all the actors in the teaching-learning process synchronously and asynchronously (Valecillos, 2019; Acosta-Castillo, 2016; Lozano, 2009), however, it is necessary to study and know the context since they do not always have the same technology and students and teachers do not have the same ability to make use of them (Lesbia, 2004; Merrill, 2011).

In this order of ideas, this research aims to establish how ICTs improve quality in higher education and to propose a strategic plan that allows its improvement. To this end, the theoretical approaches to planning, strategic planning and quality of education are initially presented. Then, the study method is proposed, the results are presented and an action plan is proposed for the university to use ICT and improve the quality of education provided to students.

## THEORETICAL FRAMEWORK

### Planning

Planning consists of determining where someone wants to be, taking the necessary actions and allocating the necessary resources to make that desired future happen. It is about establishing objectives and the most appropriate means to achieve them; it is the process of deciding before action is required (Ackoff, 1969); it is about setting a set of objectives and the steps necessary to achieve them through the use of predefined techniques and procedures (Dale, 1970). In essence, in doing the work of planning: 1) determining where the organization is today; 2) setting objectives and goals for the desired future, and 3) deciding what actions are required to achieve the desired situation.

When managers plan, they must forecast what might happen in the future to decide what to do in the present. The better the current diagnosis and how the ecosystem will behave in the future, the more

efficient will be the strategies they formulate to take advantage of opportunities and counteract possible competitive threats that arise in the environment. Planning involves its desired end and establishes the conceptual framework, through which the transformation of the current situation into the desired ideal is achieved (Baena, 2015).

Planning is the process of choosing information and making hypotheses regarding the future and carrying out the necessary activities to achieve the desired vision, with which it can be inferred that one must think about what one wants to achieve, to propose strategies that lead to achieving the desired goal (Bonn, 2001; Liedtka, 1998; Kaufmann, 1993; Senge, 1999).

**Strategic Planning**

Strategic Planning can be defined as the action of modeling the future of the organization through orderly, aligned causes and the management of competitive advantages. It is the process by which decision-makers obtain and analyze information about the organization and its environment, to evaluate its current capabilities and competitiveness and anticipate decisions about its future (Serna, 2008); it is the determination of the potentialities determined by planners with which they try to design the future (Simerson, 2011).

Although it is common to use strategic planning, it can also be confused with operational planning, strategic thinking and strategic architecture. Abraham (2005) considers that the greatest challenge to think strategically is the ability to innovate collaboratively with the various stakeholders instead of just doing research endogenous to the organization. The experiences and expectations contributed by the system's stakeholders must be used in a creative, opportunistic, systemic and intelligent way to meet customer expectations and build a competitive advantage.

Bonn (2001), for his part, considers that strategic thinking has two levels with which the organization must deal and, to the extent that it successfully integrates them, they will become a critical core competency that will consolidate its solid and lasting competitive advantage: a) the individual level of each thinker that makes up the staff of the organization, in which each subject is required to holistically understand the problems and their environment, be highly creative and innovative and understand the vision of the future, and b) at the organizational level in which the strategic thinking of each individual is articulated through the strategic dialogue of the work team and the ingenuity, experience and creativity of each person is encouraged and leveraged.

**The Quality of University Education**

In the era of modernity, the most important asset is information, which is part of the basis for the social, political and economic development of the population. The industrial society is rapidly transforming into a society of services, in which universities play a fundamental role since they are the spaces where knowledge is generated and new generations are formed, so quality in higher education must be ensured for social transformations to have transcendence.

An important reference on quality in higher education is that proposed at the International Conference on Higher Education, held by UNESCO in 1998, which states that quality refers to the set of academic programs, teaching, research, scholarships, students, facilities, equipment, services to the university community and society (UNESCO, 1999). The same organization proposes some strategies for evaluating quality and the specialized organizations that carry it out.

From the theoretical perspective, it is recurrent to talk about quality in higher education, the concept still does not seem to be uniformly defined given the nature of epistemology, mythology and

practice used to define it (Figueroa, 2012). However, some authors have made approaches and taxonomies that allow its definition and understanding, such as Gonzalez & Ayrza (1997) and Harvey & Green (1993), who plant the concept of quality in five categories: 1) quality as an exception, 2) quality as perfection, 3) quality as transformation, 4) quality as added value, and 5) quality as attitude to achieve or purpose. These five elements, according to these authors, form a new class called quality as perfection in which theoretically there are no errors or defects.

## METHODOLOGY

This research follows a positivist method, which allows describing the object under investigation based on the information collected so that the results and considerations presented will only have significance in the scope of the study. The level of depth is descriptive

Within the framework of the research, the incorporation of actions that lead to the implementation of strategic planning in the use of Information and Communication Technologies for the achievement of educational quality at the Universidad Francisco de Paula Santander was proposed, where it was based on a quantitative model based on the feasible project modality, considered as "a proposal for action to solve a practical problem or meet a need. This proposal must be accompanied by an investigation that demonstrates its feasibility or possibility of realization" (Arias, 2006).

In addition to the strategic formulation, it suits the purposes of non-experimental research, where the facts studied are observed as they are manifested, being a descriptive study, which in this regard, Parella & Martins (2012, p. 92), mention that "the purpose of this level is to interpret factual realities. It includes description, recording, analysis and interpretation or processes of the phenomena". In descriptive level research, a fact, individual or phenomenon is characterized to understand its structure, functioning or behavior".

### Population

“Population is understood as a finite or infinite set of persons, cases or elements that present common characteristics" (Parella & Martins, 2012, p. 105). For this reason, the study population will be made up of thirteen teachers representing the existing faculties of the university.

**Table 1.** Census population

| UFPS Faculties | **Quantity** |
|---|---|
| Engineering | 2 |
| Agricultural and Environmental Sciences | 2 |
| Basic Sciences | 1 |
| Business Sciences | 2 |
| Health Sciences | 2 |
| Education | 2 |
| Arts and Humanities | 2 |
| **Total** | **13** |

**Source:** Data taken from the census research population.

## ANALYSIS AND INTERPRETATION OF RESULTS

According to the data found in the research, their analysis and interpretation are presented below. In the validation of the results referred to as **Educational Innovation** supported by ICT, it is evident that on average 38.5% of the information and communication technologies are used in the development of higher education programs, which is considered a low average. Regarding the results referred to **Communication**, it is evident that on average 69.2% of those responsible for the educational process have good communication about the methods that are developed at the same time.

Regarding **Pedagogy**, an average of 46.2% of the participants in the educational process apply the teaching methods according to the guidelines given by the university in the development of the micro-curricula. But in the results referred to Research, the participation in **research** processes on the part of teachers and directors is very low, since on average it only reaches 38.5%, which makes it necessary to strengthen research groups and teachers with the use of ICT for institutional improvement.

In **Management**, it is evident that on average 46.2% of the participants are in the educational process. In **Exploration**, it is evident that an average of 61.5% of the team executing the educational process explores new teaching methods. At the same time, for **Integration**, it can be said that on average 69.2% of the participants in the educational process are integrated to establish, comment or design the pedagogical development and the implementation or use of ICTs, which generate educational quality. Likewise, for Innovation, it is observed that on average 46.2% of the participants in the educational process apply innovative methods that strengthen pedagogy in the development of training programs.

The main factor is the **Use of technological tools**, where it is verified that on average 38.5% of the participants in the educational process use or apply ICTs in the development of the micro-curricula. However, in the **Use** of virtual and audiovisual spaces, where it is found that an average of 53.8% of the participants in the educational process use virtual spaces or the use of audiovisual aids for the development of their classes or trainings, the use of virtual spaces or the use of audiovisual aids is the main factor.

The last results refer to the **Strengthening of teaching processes**, showing that on average 84.6% of the participants in the educational process strengthen or want to strengthen individually or in groups, all the processes required for the quality training of new professionals in the region, supported by the tools for technology and information - ICT.

With these results, which in planning is called strategic diagnosis, the planners can propose strategies that provide answers to the problems encountered and improve the quality of higher education through the use of ICTs. The strategic formulation that contributes to this improvement is presented below.

## STRATEGIC FORMULATION

Based on the information found, the following proposal is presented to facilitate actions that lead to the implementation and use of Information and Communication Technologies to improve the quality of education at the Universidad Francisco de Paula Santander. The execution of the suggested strategies and actions will allow to a raise the educational quality that is developed in the institution.

The optimization of educational quality occurs within the framework of individual and organizational excellence, which demands a sophisticated type of social skill, such as the management of effective communication in the current times of educational transformation that universities in Colombia are going through. The proposed actions are framed within the postulate established in the university education of learning by doing, where participants share experiences and develop activities that leave a significant contribution.

**General objective**

Develop a strategic plan that allows the implementation of Information and Communication Technologies to improve the quality of education at the Universidad Francisco de Paula Santander.

**Specific Objectives**

Motivate members of the university community to strategic planning for the use of ICT in achieving educational quality at the Universidad Francisco de Paula Santander.

Demonstrate through the implementation of actions the strategic planning for the use of ICT in achieving educational quality at the Universidad Francisco de Paula Santander.

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**Table 2.** Action plan

| | | | | |
|---|---|---|---|---|
| **Specific Objective 1:** Motivate the members of the university community to strategic planning for the use of ICT in the achievement of educational quality at the Universidad Francisco de Paula Santander. | | | | |
| **Strategy 1:** Motivation for the consolidation of strategic planning and ICT in educational quality. | | | | |
| **Activity** | **Description** | **Time** | **Place** | **Resources** |
| To understand the relationship between strategic planning and ICTs. | The facilitator will welcome the participants and explain the dynamics, which in this case is called "spider's web".<br><br>Participants will be asked to stand in a circle, a roll of yarn will be handed to them and they will be asked to identify themselves by name; then each member will throw the roll of yarn to any member following the same dynamic until a spider's web has been formed. This activity allows to fix the attention of all the individuals and to emphasize the importance of collaborative work.<br><br>Afterwards, the facilitator will explain what strategic planning is and how it is done, and how it can be used to use ICT in university education to achieve educational quality.<br><br>At the end of the activity, groups of participating professors will be formed and they will be asked to express the highlights of the activity and the talk. Each group should socialize in plenary | 20 min<br><br>45 min<br><br>30min | UFPS | **Human Resources:**<br>University professors<br><br>**Materials:**<br>Roll of yarn<br>Video Beam<br>Laptop |

| **Strategy 2.** Synergy between teachers and students | | | | |
|---|---|---|---|---|
| **Activity** | **Description** | **Time** | **Place** | **Resources** |
| Learning to communicate | Organize the participants in two groups forming two lines to perform an energizing activity. The idea is to pass a ring with a toothpick in the mouth through all the members of the team.<br><br>Explain how communication between teachers and students should be and the importance they have in the construction of knowledge and the quality of education. Likewise, how ICTs are used as a means to facilitate educational activity.<br><br>Invite university teachers and students to express their opinion orally on the topic discussed and at the end collect all the ideas expressed on sheets of bond paper, and write a closing sentence. | 20 min<br><br>45 min<br><br>30min | UFPS | **Human Resources:** University teachers, students<br><br>**Materials:** Stick, ring, Video Beam, computer, triptychs. Bond paper, markers |

| **Strategy 3** Will the time I spend at the university be enough? | | | | |
|---|---|---|---|---|
| **Activity** | **Description** | **Time** | **Place** | **Resources** |
| Will the time I spend at the university be enough? | The activity is called How much does an hour in college cost? It begins with a reflective, calm and paused reading.<br><br>After the reading, participants are invited to reflect on the reading and become aware of the importance of time and how much of it is spent at the university, and how much benefit is derived from it.<br><br>Comment to the university professors and students the importance of the time they should dedicate to the university for their formation. | 20 min<br><br>60 min<br><br>30min | UFPS | **Human Resources:** University teachers, students<br><br>**Materials:** Reflective reading, Paper and markers Tri-folds, copies, among |

| | | | | |
|---|---|---|---|---|
| | | | | others. |

**Specific Objective:** Demonstrate through the execution of actions the strategic planning for the use of ICT in the achievement of educational quality at the Universidad Francisco de Paula Santander.

| **Strategy 4. Technology linkage** | | | | |
|---|---|---|---|---|
| **Activity** | **Description** | **Time** | **Place** | **Resources** |
| Technology linkage | Invite university teachers to share a different day with their students, using a computer application (APP) to improve learning and academic performance.<br><br>Create an app using a QR code that invites university teachers, with the help of their students, to search for words that are hidden throughout the university campus to put together a sentence related to strategic planning.<br><br>Create sentences with the words found and invite university professors to make a brief commentary on the word. | 20 min<br><br>45 min<br><br>30min | UFPS | **Human Resources:** University teachers, students<br><br>**Materials**: Multi-colored cardboard pieces, Multi-colored cardboard pieces, Mobile device App |

| **Strategy 5:** Efficiency and effectiveness | | | | |
|---|---|---|---|---|
| **Activity** | **Description** | **Time** | **Place** | **Resources** |
| Efficiency and effectiveness | The facilitator will invite participants to reflect on what efficiency and effectiveness mean in the administrative process, especially in the University and its importance in the quality of education.<br><br>Construct everyday classroom examples of efficiency and effectiveness in the process of developing a class.<br><br>Construct mind maps on the understanding of the concepts of efficiency and effectiveness and how to optimize them in the classroom. | 30 min<br><br>60 min<br><br>40min | UFPS | **Human Resources:** University teachers, students<br><br>**Materials:** Reflective reading, copies, brochures, bond paper, video Beam, laptop computer |

**Source:** Own elaboration

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## CONCLUSIONS

The results found in the research show two groups of factors that add value to educational quality: The first group is made up of communication between teachers and students, exploration, application of pedagogical processes, strengthening of teaching processes and integration of the actors of the educational system, in which more than 50% consider that ICTs contribute to educational quality. The second group of factors refers to research, educational innovation and management, where the results found show that less than 50% consider that they contribute some value to the quality of higher education.

Secondly, it was found that only 38.5% of the participants in the educational process apply ICTs in the development of the micro curriculum, however, about 54% use some tools such as virtual classrooms, computers or video beams.

Based on these results, an operational plan or action plan is presented that can strengthen the use of ICTs in the teaching process to achieve educational quality.

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