

## Chapter 1.

# Methodological design

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### Introduction

This chapter describes the problem that was formulated in the research, the objectives, and the methodology implemented for its development.

The research study on which this chapter is based was guided by a scientific-technical design. This is defined as an activity that occurs in a complementary manner of a routine nature in some cases. In this type of research, knowledge is taken into account to obtain data.

In this research, four phases were developed to respond to the objective of the investigation. The first phase was called “Diagnosis of the tutorial accompaniment” and was taken as a population the Faculty of Distance Studies of the UPTC to determine the current conditions of the teaching accompaniment and to contrast the perception of the student versus the teacher. And thus obtain a diagnosis of the state of accompaniment. The second phase “Analysis and identification of tutorial accompaniment models” consisted of a review of the bibliography on the subjects of the research, in particular the subject of models of teaching accompaniment, the quality of teaching accompaniment, analyzing them, and from them designing a model of their own, pertinent, and adjusted to the needs of current distance and virtual education. The third and last phase was the “Design of the tutorial assistance model,” where a methodological proposal was designed, to articulate and define the criteria and quality standards that allow the implementation of the teacher accompaniment model in online or distance programs, supported by a management and monitoring system.

## **Description and Formulation of the Problem**

Today, the use of ICTs is unquestionable, they are inserted in most of the activities that organizations carry out, and they are part of the technological culture that surrounds society. They have become an axis of economic and social development, they are a factor in measuring the level of development of a nation or community.

There is already sufficient evidence of the favorable contribution of ICT to the productivity growth of economies. Not only in the US, in Europe, for example, more than half of productivity gains are generated by ICT (Banco Bilbao Vizcaya Argentaria Research [BBVA Research], 2015). Its effects on the different areas of business management, consumption habits, the dialogue between companies and customers, on the consumption patterns of the latter, or global production are widely documented.

Particularly significant are the consequences on organizational structures, forms of learning, and research, or on the codification of knowledge relevant to organizations. All this favors more flexible models that can take advantage of the capacities of all the relevant agents in the organizations and these with the outside. This is the necessary climate to shelter innovative tensions.

Colombia has accepted this challenge and for more than ten years has been designing programmers to provide massive access to ICTs and in particular to education through ICTs, especially in education, and has now undertaken through the Ministry of Information and Communication Technologies (MinTIC) to grant massive access to the Internet, strengthen government services online (e-government), digital convergence, support the development of online education (e-learning), and expand the coverage of telecommunication networks at the national level to reduce the so-called digital divide, providing large economic and human resources for this purpose.

But if ICTs are a development axis for education, the economy, and society, how can they be used to make citizens more competitive by implementing management systems for support in online and distance programs?

What happened in India more than a decade ago, with the adoption of a process of training its human capital to make ICTs a source of income, work, and development, are examples of how to take advantage of ICTs to transform society into a more competitive one.

The department of Boyacá in Colombia and according to statistics from the Centro de research of the Telecommunications (Centro de Investigaciones de las Telecomunicaciones [CINTEL], 2007 & CINTEL, 2015), the ICT sector is one of the departments with the least coverage of ICT-supported services (Comisión de Regulación de Comunicaciones [CRC], 2010) and lower coverage in higher education, particularly in terms of Internet access. In recent years, efforts have been made to improve the coverage of technological services, but much remains to be done.

Although Boyacá and eastern Colombia are lagging behind other regions in terms of Internet access, in terms of the incorporation of ICTs at the business level the figures are similar for almost the entire country, except for Bogotá, Medellín, and Cali, cities that are leading these processes due to their economic development.

Social, educational, and cultural factors are required to determine a methodology for evaluating quality criteria and standards for implementing e-learning projects.

E-learning in the 21st century has transformed society, human relations, and the economy. It is now a vital source of access to education. Its implementation involves changes in the way of studying, of interacting with each other, of accessing knowledge, ICT have changed not only the format of presentation of knowledge but also the way of learning of the individual himself. An analysis of these changes is based on the theory of connectivism, in which the author addresses how, by taking advantage of ICT, human beings connect with others, with their environment, and with the information itself to learn or unlearn and thus satisfy their needs (Siemens, 2005).

The boom in formal or continuing education programs under the e-learning model in the last five years has had great growth. According to the report “The Global E-Learning Market” recently published by the Online Business

School (OBS), Colombia is in second place in the Latin American region with the best possibilities for the future in terms of e-learning, whose expansion is estimated at 18.6% (Online Business School [OBS], 2014). In this same study, it was predicted that by 2020 this is the dominant educational modality at a global level.

On the other hand, and according to Docebo's studies, in its study "Trends in the e-learning Market and Forecasts 2014-2016" Latin America ranks fourth in growth of 14.6% (Docebo, 2014).

Given this global panorama and particularly the case of Colombia, Universidad Pedagógica y Tecnológica de Colombia (UPTC), the question arises: How to define a model or strategy to improve the quality of teacher accompaniment in online and distance education? And what conditions should exist in the process of teacher accompaniment in these modalities?

From this problematic situation related to the teaching accompaniment in online programs (e-learning) or at a distance this project was developed.

### **1.1. Research Objectives**

The general objective of the research was to design a quality management model for teacher accompaniment for online and distance programs based on institutional diagnosis and to improve the quality of education under these modalities.

And to achieve this, specific objectives were set:

- To carry out the institutional diagnosis of teaching accompaniment, from the perspective of the student and the teacher to determine the current conditions of the latter and his or her strengths and weaknesses.
- To build the quality management model of teacher accompaniment to improve tutorial and teaching support in online and distance education.
- To design a methodological proposal that articulates and defines criteria

and quality standards to implement the model of teaching accompaniment in online and distance programs.

The place where the research was carried out will be at the Universidad Pedagógica y Tecnológica de Colombia.

## 1.2. Research Approach and Methodology

This research was framed within mixed, quantitative-qualitative research that seeks to analyze theoretical references and experiences in other latitudes on models of teacher accompaniment in online or distance education and on the design of quality criteria and standards to improve accompaniment.

It is framed within the line of research called: Digital Technologies Belonging to the Axis of E-Learning and E-Learning Environments.

Initially, a literature review was carried out, which allowed the construction of a theoretical framework to establish national and international quality factors for teacher support in online education and the incorporation of ICTs in education.

The research population was students from online and distance learning undergraduate programs at the Universidad Pedagógica y Tecnológica de Colombia.

A population of 5,870 students was taken as the population group for the diagnosis, and the sample was defined, which led to the application of the instruments designed for the student to a total of 688 students, from 17 programs of the Faculty of Distance Studies at the undergraduate level, from the first to the tenth semester.

The research was carried out in three phases:

**First phase:** Diagnosis of the tutorial accompaniment in the Faculty of Distance Learning, in which we sought to design and apply instruments to the student population, which allowed us to determine the current conditions

of teaching accompaniment from the student's point of view to obtain a diagnosis of the state of accompaniment in the institution.

This information made it possible to establish the strengths, weaknesses, opportunities, and threats that the university has to face a model of teacher accompaniment in its online or distance training projects. There, the information was consolidated in a strategic document that allows the institution to redefine its training nuclei to face the educational scenarios under the e-learning model more efficiently and effectively.

**Second phase:** Analysis and identification of tutorial accompaniment models. In this phase, the bibliographical analysis related to the models of tutorial teaching accompaniment, quality of accompaniment, models of quality management were carried out. To analyze them and from them design an own model, relevant and adjusted to the needs of the institution, starting from standards that currently exist about education mediated by information and communication technologies with the main emphasis on processes and procedures, of course without leaving aside the technological infrastructure.

**Third phase:** Design of the tutorial care model. It consisted in designing a methodological proposal, to articulate and define the criteria and quality standards that would allow the implementation of the teaching support model in online and distance programs, supported by a management and monitoring system.

In the analysis of the information obtained from the instruments to present and socialize the results of this work and expose the general diagnosis that allows the current state of accompaniment and its quality, to address and determine the needs and thus define a methodology of criteria and quality standards for the design and development of a model of online teaching accompaniment.

The information from the first two stages was processed to establish trends and thus synthesize and present the diagnosis by program and semester of the Faculty of Distance Learning.