

How to Cite:

Carreño, O. F. M., Moreno, V. E. T., & Mayorga, D. J. Z. (2022). The stimulation of learning in the subject/learning unit fundamentals of administration. *International Journal of Health Sciences*, 6(S2), 13916–13932.
<https://doi.org/10.53730/ijhs.v6nS2.8649>

The stimulation of learning in the subject/learning unit fundamentals of administration

Oscar Fabián Moncayo Carreño

Universidad Técnica Estatal de Quevedo. Ecuador

Corresponding author email: omoncayo@uteq.edu.ec

Victoria Elvira Torres Moreno

Universidad de Granma. Cuba

Email: vtorresm@udg.co.cu

Darwin Javier Zamora Mayorga

Universidad Técnica Estatal de Quevedo. Ecuador

Email: dzamora@uteq.edu.ec

Abstract---The objective of this paper is to characterize a didactic model of learning stimulation of the subject/learning unit Fundamentals of Administration, which is specified in the development of a methodology that favors the quality of learning of students who are trained as graduates in Business Administration at the State Technical University of Quevedo (UTEQ) in Ecuador. Theoretical, empirical and statistical research methods were used. The didactic model of learning stimulation of the subject/learning unit Fundamentals of Administration is made up of the following components: Projective conceptualization, Activation and Regulation of learning, in which relationships are established to characterize the logic of the teaching-learning process of said content based on the relationships between the dynamic and static components, the conception of the teaching tasks and the problem-oriented method of professional simulation, from which the developmental relevance of said process derives, as a resulting quality the application in practice of the methodology, as a concretion of the model, allowed corroborating its effectiveness in terms of raising the quality of learning of the referred subject.

Keywords---teaching-learning process, learning stimulation, learning activation, learning regulation, professional simulation problem-solving method.

Introduction

At present, the training of the new generation of professionals is a challenge for universities, as presented in the profile of the professional in the Bachelor's Degree in Business Administration; they are the driving force behind the training of the labor resources that the country requires in a competent manner; consequently, the mission of this degree is to train workers suitable for a world of work in continuous change, which periodically requires recycling, reconverting or updating the professional competencies demanded by the economic and social development of the country. In this sense, the didactic model that is proposed responds to the task that Ecuadorian universities have within the framework of the transformations that are taking place in the country on the basis of the National Development Plan in Ecuador (2017), that students learn by doing and develop their knowledge with an awareness of producer.

In this sense, it is important to consider the need for didactics for change as a challenge for the abandonment of traditional teaching methods towards new methods that enable the teaching-learning process to develop in such a way that it combines cognitive and affective processes to achieve educational objectives at different educational levels (Fernández *et al.*, 2019). Thus, the achievement of a developmental teaching-learning process constitutes an urgent need that induces change, not only in the way of thinking, but also of projecting this process from an active position (Marrero, 2018).

The teaching-learning process is vital to achieve the development of the personality of students that society demands at present, so that besides being a polysemic category, it is of great significance for the activity of pedagogues (Cueva *et al.*, 2020). It is in this sense that research aimed at stimulating the learning of students of the Bachelor's Degree in Business Administration at the State Technical University of Quevedo, Ecuador, has been oriented; thus, the article characterizes a model and a methodology that concretizes it, for the stimulation of learning of the subject/learning unit Fundamentals of Administration, which favors the quality of learning of students who are formed in this career.

Development

For the elaboration of the didactic model and the methodology that concretizes it, the conceptions of the Marxist-Leninist Philosophy are assumed, particularly the materialist-dialectic theory of knowledge. From the Marxist-oriented sociology, the relations are established between the teaching-learning process of the subject/learning unit Fundamentals of Administration, with education for life and profession, as an expression of the school-society relationship in a process that allows individual appropriation of social contents and social objectification of individual contents.

The model is also based on the postulates of the Historical-Cultural School of the development of the human psyche, by Vigotsky (1988) and his followers, whose conceptions have been taken up by different Cuban and Ecuadorian authors, including Moncayo *et al.* (2020a), as well as Moncayo *et al.* (2020b). In this sense, the following are considered: the education-teaching-development relationship,

the significance of the social plane for the individual's learning by emphasizing the role of culture in individual development, with specificity in: the genetic law of development, the concept of the zone of proximal development and the social situation of development. In addition, it considers the transit through the stages of the assimilation process from the external to the internal and the structure of the activity in actions and operations, whose systematization leads to the development of skills and habits as components of the content of teaching, as well as the formation of a competent professional, given the demands of the university training process in Ecuador.

Likewise, the criteria on developmental teaching-learning process are taken into account, which emphasize the requirements of developmental learning and its fundamental requirements, such as: activation-regulation, meaningfulness, reflection-regulation and motivation, as well as contextualization and collaboration as characteristic features. The dialectical relationship between the components of the teaching-learning process, seen from General Didactics and its particularities for ETP, is also considered. In this sense, fundamental concepts related to ETP are addressed, such as: professional contents, appropriation of professional contents, professional problems, professional situations and active methods, among others. In this case, the occupational game is used as a feasible simulation method to be used in the subject/learning unit Fundamentals of Administration (Moncayo, 2022).

The laws of Didactics proposed by Álvarez (1998) and contextualized to ETP are assumed, as well as the didactic principles proposed by different authors, among which those proposed for ETP are essentially considered: the protagonism of the student in his integral formation in correspondence with the professional model, linking study with work in the contexts of his professional formation, unity of the collective and the individual from group contexts and the innovative and anticipated formation in the context of polytechnic school - entity - labor - community. The above imposes the projection of this process, taking as epistemological foundation the principle of integrity, cooperation and attention to diversity of the teaching-learning process in ETP systematized by Abreu and Soler (2014).

At the same time, the concept of learning stimulation of the Subject / learning unit Fundamentals of Administration is defined as a starting condition, a concept not worked, in this way, in the scientific literature consulted. This is understood as the group process in which the teacher favors the active appropriation of the content by the students, in a logic that favors the relationships between the static components of the teaching-learning process with the dynamic components, mediated by the teaching task, in function of raising the quality of learning of the subject/learning unit Fundamentals of Administration and consequently the formation of a competent professional in the necessary link with life and its relationship with the socio-professional activity in a given context, in close relation to the processes of socialization, which allows them to know, learn, know how to do, know how to create, transform themselves and transform the social environment (Moncayo, 2022).

This definition has been elaborated from the characterizing elements for the

assimilation of the knowledge of the subject / learning unit Fundamentals of Administration, which:

- It takes into account the combination of essential aspects of this process and establishes the interrelation between activity, communication, independence and the necessary help, as well as the relationship that the student maintains with others and with the group.
- It feels the need for students to contribute to the provision of adequate forms in the search for the solution of teaching tasks, with the application of knowledge, linked to the content of the profession.
- It is a process aimed at the education of the personality, which favors its growth and independence.

Modeling the learning stimulation of the subject/learning unit Fundamentals of Management is supported by the conceptions of the General Theory of Systems; insofar as the construction of systems has become an incalculable knowledge construction tool, given the emergence of the new sciences in the digital era. In this way, it allows representing the objective reality to interpret the phenomena and processes of the objective reality given its multiple relationships and interconnections to penetrate its complexity (Peña and Velázquez, 2018). In this sense, it is important to consider the properties, objectives and functions of each system, emphasizing the need to consider its condition of totality in order to achieve an integrating vision of the process being modeled.

From the perspective of the research, the didactic model is assumed as expressed by Valle (2010, p.1) when he says: “it is the representation of those essential characteristics of the teaching-learning process or of any of its components in order to achieve the intended objectives”. With the above, it is considered that the didactic model is not only the representation of the essential characteristics of the teaching-learning process (Torres *et al.*, 2022), but also its foundation, conceptualization, relationships and derivations, which are an expression of its functioning as a system and which allow it to be interpreted, designed and adjusted, according to the theoretical-methodological relationships that support it.

For the purposes of this research, the didactic model will be understood as the representation made of the research object to solve the research problem, as an instrument to optimize the process, which takes into account the place of the teacher, the students and the school group, in dialectic interaction with the other didactic components of the teaching-learning process of the subject/learning unit Fundamentals of Administration, as a necessary condition to favor the learning of the content, from the didactic-methodological treatment, linked to that of the profession. The didactic model of learning stimulation of the subject/learning unit Fundamentals of Management is a model whose nature is systemic, which is evidenced in the structural-functional interrelation established between the components Projective Conceptualization, Activation and Regulation of learning, which in their dynamics make possible the relevance and effectiveness of the process.

The proposed model, as well as the methodology, has a didactic content as it

characterizes the relationship between the components of the teaching-learning process through the didactic-methodological treatment of the subject content. It also facilitates an integral vision of the process based on the functions and relationships between its subsystems and constituent components.

The proposed model presents the following characteristics:

- It is based on the result of the systematization of the conceptions that constitute the epistemological basis for the study of the object and the considerations derived from its diagnosis.
- It is intended to explain, from its specificities, the learning stimulation of the subject/learning unit Fundamentals of Administration that favors contextualized professionalization.
- It is conceived from the logic and dynamics of the relationships between the components of the teaching-learning process.
- The model is built, in turn, based on the results of research related to the teaching-learning process in general and in technical subjects in particular, among which authors such as Tiá (2014), Jiménez (2018), Aguilar (2019), Piñeiro (2019) and Riverón (2020), among others, stand out.

The proposed model has the advantage that:

- It considers the basic character of the subject/learning unit Fundamentals of Administration in the professional training process.
- It conceives the activation of learning as a condition for its stimulation as a function of the transition from dependence to independence, the realization of learning for life and the integral formation of the personality as requirements for the formation of a competent professional.

The relationships between the components that characterize the structure of the model reflect a new theoretical interpretation, as an epistemic manifestation that emerges between them, and allows to describe and explain - on the basis of the principle of gradual derivation, characteristic of any system - the relationships mentioned above (Miguel Medina Romero, 2021).

The subsystem Projective conceptualization is defined as the process in which the conditions are created for the stimulation of learning of the subject/learning unit fundamentals of Administration based on the diagnosis and the precision of the way to plan and execute the actions that make it possible to activate said process, integrating the typology of classes and other organizational forms through the theory-practice link materialized in the organizational components of the process; say academic - labor and research, characterized by a prognostic function.

This subsystem is integrated by the components: Identification of learning needs and Organizational integration for the learning stimulation of the subject/learning unit Fundamentals of Administration. As a resultant quality of the subsystem, the systemic organicity of the stimulation of the teaching-learning process of the subject/learning unit Fundamentals of Administration is considered.

The systemic organicity of the learning stimulation of the subject/learning unit Fundamentals of Management is the feature that characterizes this process on the basis of its prognostic function, inasmuch as on the basis of the identification of individual and group needs it is possible to project the possible ways to achieve an adequate stimulation process on the basis of the appropriate link between theory and practice, based on the relations between the academic-work and research aspects, strengthened by classes in which, from the integrating teaching task, the students' protagonism is promoted as a source of learning stimulation in a totalizing way, based on the objectives established in the professional's profile. In the relationships established among the components of this subsystem, the objective-content-organizational form relationship is privileged as components of the teaching-learning process.

In this way, a projection based on the described relationships enhances the transit through different levels of complexity and assimilation, focuses attention on the task and on the structuring of the teaching-learning process towards the active search for knowledge by students, taking into account the actions to be performed by them through the theory-practice link, and enables the transit from dependence to independence, based on the identification of needs, as requirements of a developmental teaching-learning process.

The projective conceptualization, as it has a prognostic function, enables the achievement of a greater learning stimulation as it is mediated in its execution by the use of different ways that enhance the protagonism in the execution process. Thus, the relationship is established with the subsystem Activation of learning of the subject/learning unit Fundamentals of Administration as a process aimed at the execution of the elements determined from the organizational point of view through the use of different ways that make possible the conscious and committed action of students in the learning of the subject/learning unit Fundamentals of Administration by materializing the theory-practice link and the transit through the assimilation levels in an independent and creative way according to their professional preparation. It has a mobilizing function.

This subsystem is made up of the components Motivation and Problematicization of learning of the subject/learning unit Fundamentals of Administration. The problem-solving method of professional simulation exerts a notable influence on the training of future professionals in the Business Administration career, since it has the following characteristics: it constitutes a way for the activation of learning, it enhances the intellectual development of future professionals, as well as the transition from dependence to independence and self-determination, given the need to make decisions in the assumption of roles and the analysis of problematic situations, it awakens interest in the subject and the profession, it creates in students the collaborative spirit in the joint fulfillment of tasks, it demands the application of knowledge, strengthening the theory-practice link, as a basis for the formation of competencies and accelerates the possibilities of adaptation to the business world of work.

The quality resulting from the relationships between the components analyzed is the professional significance of the learning stimulation of the subject/learning unit Fundamentals of Management. The professional significance of the learning

stimulation is the feature that characterizes the learning stimulation in the subject/learning unit Fundamentals of Management by creating learning situations that promote meaningful and protagonist learning of students, both from the point of view of knowledge and experiential affective relationships, through the regulatory reflection given in the context of professional performance, from the use of the problematic method of professional simulation.

This process is characterized by complying with the demands of the developmental teaching-learning process, as it responds to a structuring of the process towards the active search for knowledge through reflective actions that stimulate thinking and independence, promotes constant motivation towards the learning activity and towards the profession, develops forms of collective activity and communication achieving the interaction of the individual with the collective, making possible the attention to individual differences and the transition towards higher levels of development based on the demands of the professional's profile.

In the relationships established among the components of this subsystem, the objective-content-organizational form-method relationship is privileged as components of the teaching-learning process. In the learning stimulation process of the subject/learning unit Fundamentals of Administration, a dialectic relationship between the processes of execution and evaluation can be appreciated, as the latter fulfills functions inherent to the activation of learning by constantly provoking the assessment of the results of the process in a general sense, as well as of each student in particular, for which it is necessary to use in the process of verification and feedback, teaching tasks derived from the use of resources and methods used in the process of learning activation.

Thus, the subsystem Regulation of learning of the subject/learning unit Fundamentals of Administration is considered as the process that, from a holistic dialectical projection, makes it possible to assess the achievements reached in the process, both in general and in particular by each student in order to determine interventive actions for the improvement of learning in an interactive way, that is, in the student-teacher, student-student, student-group relationships; from this point of view, it fulfills a feedback function.

This subsystem is integrated by the components: Determination of the patterns of results and functional concreteness of learning assessment. From the relationships established between these two components, the resulting quality is the value intentionality of the evaluation, which is characterized by the unity between the instructional-educational-developmental aspects inherent to the professional's training process through continuous analytical-reflective and regulatory processes among the actors of the process; it intends the appropriation of the content in its integrity, enhances the formation of values and is ahead of the development, achieving higher levels in students by enhancing the zone of proximal development, based on the professional problems stated in the professional's profile, consciously internalized.

The relationships between the subsystems and components that characterize the structure of the model reflect a new theoretical interpretation, as an epistemic manifestation that arises between them, and allows describing, explaining and

predicting higher stages of development of the components; the conscious-participative character of the students in their modes of professional performance is thus manifested, as well as the developmental relevance of the learning stimulation of the subject/learning unit Fundamentals of Administration, as a superior quality.

In this way, the contribution to the theory through the didactic model of learning stimulation in the subject/learning unit Fundamentals of Administration in its three subsystems and components, constitutes the basis for the development of a methodology that concretizes it, and its consequent practical verification in the scenarios of the Quevedo State Technical University.

- The methodology is elaborated based on the following requirements:
- To consider as a basic condition the demands of the professional's profile and the objectives of the subject's program.
- Execute the teaching-learning process of the subject in a way that favors the integration, understanding and systematization of the content by the students.
- Link the content of the subject with the pre-professional practice, in order to achieve learning motivation and a reflective position in the students' performance.
- Observe its correspondence with the references addressed in the Model of Learning Stimulation of the subject and its resulting quality: developmental relevance.

The methodology is characterized by the interrelation between the stages that compose it, by its integral and system character, by the active role and the communication that it facilitates to establish between all the participants in the process. The stages are arranged in an orderly manner and are related with a certain relative independence. Among the stages there are relations of coordination and subordination, some are supported by others, the lower ones serve as a basis for the higher ones, and these in turn condition them, manifesting the recursive property; all are subordinated to the general objective of the methodology, as the guiding component of the whole.

Thus, it is characterized by its flexibility to design and execute the process based on the interests and potentialities of the participants in it, which facilitates the developmental nature of the process and the commitment to improve their preparation for future professional performance. Its representation is shown in Figure 1.

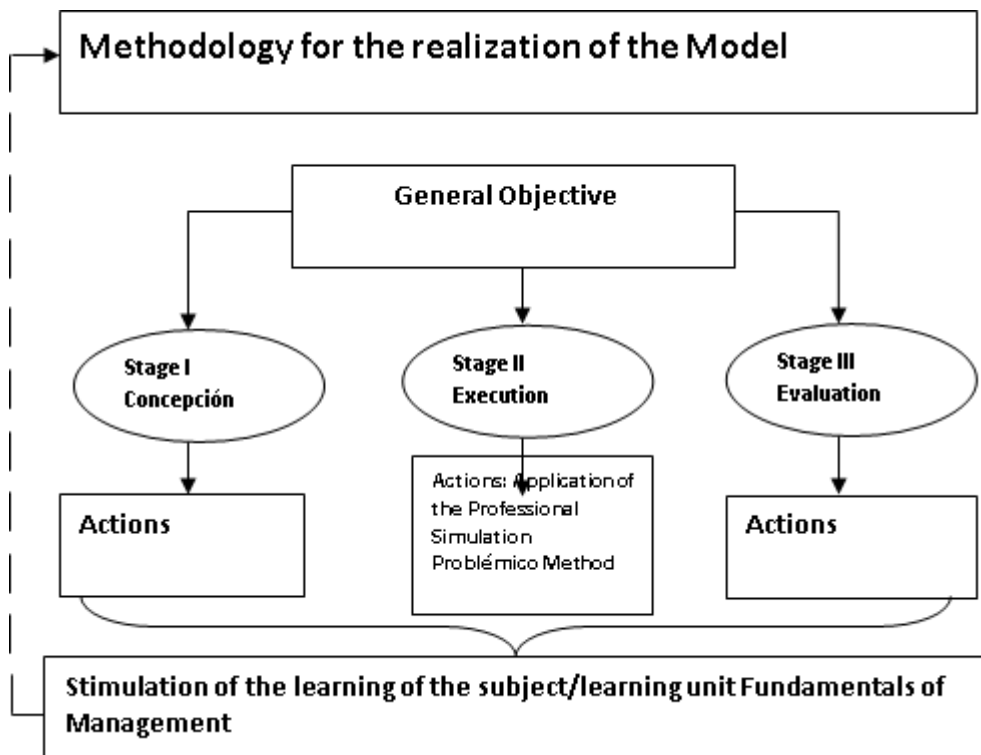


Figure 1. Graphical representation of the methodology.

One of the actions that characterize the methodology is to develop methods that guarantee, in the students, the increase of reasoning and stimulating abilities, by creating problémico situations, as well as generating independent cognitive activity (problem-solving method of professional simulation and the procedures that characterize it).

The following are suggested as procedures for the application of the professional simulation problem-solving method:

- ✓ Select the content to be treated from the professional situations.
- ✓ Motivate students to carry out the activity by setting out the problem situation and the objective to be achieved.
- ✓ Specify the problem-solving tasks to be developed.
- ✓ Distribute responsibilities and tasks to be performed.
- ✓ Solve the problem-solving tasks individually and collectively.
- ✓ Present the results obtained through reports for the creation of portfolios with the derived experiences.
- ✓ Evaluate how the problem situation has been solved and the fulfillment of the objective.
- ✓ Stimulate the participants.

In this way, three tasks to be developed in the Administrative Process unit are presented as an example of the method. Group activity 1: Objective: To apply the administrative process to a business idea. Once the contents of the functions of

the Administrative Process (PLANNING, ORGANIZATION, EXECUTION AND CONTROL) have been taught and related in class and on the basis of a real situation, the following are requested: Actions that justify the systemic and continuous character of the administrative process:

- Establish the results you intend to achieve (OBJECTIVE DECISIONS).
- Determine the departments that allow the operation of your business idea (ORGANIGRMA).
- According to the above: determine the requirements to be met by the personnel to be selected to fulfill the functions of the company in an ideal way.
- Define standards to measure the performance as a guarantee that the Planning is carried out..

Group activity 2: Objective: Apply Planning to a business idea. Actions that justify Planning as an administrative function. Once the contents of PLANNING as a function of the Administrative Process have been taught and socialized in class and on the basis of a real situation, the following is requested:

- Define Planning as a function of the management process.
- Indicate 5 important aspects of planning a business idea.
- According to the types of plans: argue the ideal one for your business idea.
- Detail the process to follow to define the mission and vision of a business idea.
- According to the above: make the mission and vision to your business idea.

Group activity 3: Objective: To elaborate an organization chart for a business idea. Once the contents of the ORGANIZATION as a function of the Administrative Process have been taught and socialized in class and based on a real situation, the following is requested:

Actions justifying the use of organization charts:

- Define Organization as a function of the administrative process.
- Detail the differences between departmentalization and organization chart in a business idea structure.
- Indicate 5 advantages of using the organization chart in a business idea.
- According to the types of organization chart: argue the ideal one for your business idea.
- Make a graphic representation of your business idea structure (organization chart).
- According to the above: determine the requirements to be met by the personnel to be selected to fulfill the functions of the company in a suitable way.

In general terms, in the application of the method, students will evaluate the patterns to be considered for the process to be efficient and effective, from which they will simulate actions to justify the systemic and continuous nature of the

Administrative Process in each of its functions. The group will be divided into teams to execute the indicated tasks and finally each team will report the results. The evaluation of the methodology was carried out through its practical application, taking into account the following recommendations: Its application is based on a diagnostic process for the identification of learning needs. The stages will be implemented from the methodological work of the disciplinary and subject collective, gradually, with a view to its total application.

The stages and the actions proposed in each one of them can be executed totally or partially depending on the content of the subject and the level of preparation of the teachers and students. The actions, as well as the procedures of the method can be perfected in the curricular week for the updating of the syllabus. Deadlines for compliance

The methodology has a long, medium and short term scope:

- Long term: as a way to achieve a final result in the training of the professional.
- In the medium term: from the preparation of the subject in the first year.
- Short term: through the inclusion of its procedures through the development of each subject.

The intervention in the educational practice was developed from an experimental design, in which the pre-experiment was taken as the experimental variant. The elements considered are detailed below:

Working hypothesis

If the learning stimulation methodology of the subject/learning unit Fundamentals of Management is applied, then the quality of learning of the students of the Bachelor's Degree in Business Administration will be improved. Determination of the relevant variables.

Independent variable: the methodology as a concretization of the didactic model of learning stimulation.

Dependent variable: quality of learning

Raising the quality of learning of Business Administration students means that the process of appropriation of the content related to the subject Fundamentals of Administration is understood in all its magnitude and depth and allows the formation and development of skills and values in a flexible and creative way in situations of the profession and life in general.

Thus, the following dimensions, indicators and measurement criteria of the dependent variable were determined as follows:

Dimension 1. Content mastery.

- Knowledge mastery
- Level of skill development

- Value formation
- Dimension 2. Transfer of content.
- Ability to apply knowledge creatively.
- Possibilities to apply the knowledge in function of the profession.

Dimension I. Mastery of content.

Indicator 1. Knowledge mastery.

Low: when the student is insecure in his/her approaches and depends on high levels of help.

Medium: when the student can express his/her knowledge with depth and need for help, with adequate expression but lacking creativity.

High: when the student can express his/her knowledge with depth and creativity, without the need for help, with adequate expression and solidity in his/her approaches.

Indicator 2. Level of skill development

Low: when the student is not able to solve the teaching tasks that imply the application of knowledge.

Medium: when the student is able to solve the teaching tasks that imply the application of knowledge in a reproductive way.

High: when the student is capable of solving teaching tasks that involve the application of knowledge in a productive manner.

Indicator 3. Values formation

Low: when the student does not evidence the values associated with the content.

Medium: when the student evidences the values associated to the content through diverse actions according to external demands.

High: when the student evidences the values associated with the content through diverse actions in a spontaneous and constant manner.

Dimension II. Transfer of content.

Indicator 1. Ability to creatively apply knowledge.

Low: when the student is not able to modify the solution strategies to solve the tasks.

Medium: when the student is able to modify the solution strategies under the guidance of the teacher by levels of help.

High: when the student is able to modify solution strategies independently.

Indicator 2. Ability to apply knowledge according to the profession.

Low: when he/she is not able to apply the knowledge in function of the profession.

Medium: when he/she is able to apply the knowledge in function of the profession in known situations.

High: when he/she is able to apply the knowledge in function of the profession in new situations with a high level of complexity.

The learning level index is determined by the following algorithm.

Determine the indicators to be used in each dimension. 2.

2. Give each indicator a weight or importance on a scale of 1 to 3. Based on the author's experience, each of the indicators used was evaluated and classified into three groups, according to their level of importance for learning the Fundamentals of Management: indicators in the least important group were assigned a weight of one; indicators with a higher level of importance or with double the importance were assigned a weight of two; and indicators with the highest importance were assigned a weight of three.

3. Evaluate each of the indicators with categories Low (1), Medium (2) and High (3).
4. Calculate the index of the learning level of Fundamentals of Administration (INAFA); it is calculated by the formula:

INAFA = Points obtained / Total possible points.

If we want to express the above in a more appropriate way, from the mathematical point of view, we could state that:

Where n: number of indicators used.

$$INAFA = \frac{\sum_{i=1}^n P_i \cdot X_i}{\sum_{i=1}^n MaxCat \cdot P_i}$$

P_i : weight given to each of the indicators according to their level of importance.
 X_i : ratings given to each of the indicators.

MaxCat: maximum value at which the indicators are evaluated (3).

The result obtained by applying the above procedure is always a number ranging from zero to one, which expresses the level of knowledge achieved on management fundamentals. In the same way, the corresponding one for the group is calculated. Type of experiment: pedagogical, natural, formative. Purpose of the experiment: the methodology to stimulate learning of the subject/learning unit Fundamentals of Administration.

Objective: To verify the effectiveness of the application of the methodology to stimulate learning of the subject/learning unit Fundamentals of Administration, through the evaluation of the dimensions and indicators foreseen. Experimental units: 32 first year students of the Bachelor's Degree in Business Administration at UTEQ.

Before applying the methodology, the verification experiment is carried out; the results related to the learning of the fundamentals of administration content through the pedagogical input test explained below are assumed as the starting state. To verify the validity or reliability, the proposed methodology was applied to the selected sample, taking into account the previously explained phases of the pre-experiment, in which an entry pedagogical test was applied, the results of which reveal that, in the dimensions evaluated, there are still insufficiencies that limit the quality of learning.

In the formative experiment, the methodology is introduced in the educational practice in the aforementioned units, according to the dosage elaborated for their development, taking into account the indications of the syllabus for the year. These units were selected because they are the ones taught in the first year and in them the elements that serve as a basis for the mastery of the administrative process are deepened, systematized and expanded. The experiment was developed from May 2018 to February 2019. The methodology was introduced through the classes, for which the units "Fundamentals and administrative principles, Administrative Process and "Generalities of the Company" were selected from the syllabus of the subject / learning unit Fundamentals of Administration; it went

through moments of orientation, execution and control of learning.

The classes were conceived with the intention of using the methodology, from the concretion of the actions that conform it by the teacher of the subject, participant researcher, which did not require preparation sessions to third parties. Accordingly, and as a consequence of the methodology, the results of the initial diagnosis of the group were taken into account, as well as those of the pedagogical test previously evaluated in order to emphasize the most significant weaknesses.

Then, the methodological analysis of the units: "Fundamentals and administrative principles, Administrative Process and "Generalities of the Enterprise" was carried out, in order to specify the actions to be performed and the application mode of the professional simulation problem-solving method. During the application of the methodology, attention was paid to the progressive mastery of the content by the students. This work was based on a flexible organization of the teaching in which it was demonstrated, suggested and corrected, on the basis of the articulation of collective and individualized aids, with the intention of stimulating the transition from the student's external control to his internal control, which allowed observing significant steps of progress in the students. At the end of the second unit, the exit pedagogical test was applied as a control experiment.

From the results obtained, it is evident that the students established the relationship between the productive and the reproductive by being able to apply the administrative process when describing its elements, interpret the administrative principles applied to a company, explain the administrative functions and their relationships, the structure of a company represented graphically through an organization chart, carry out business ideas with the purpose of satisfying needs according to diagnoses for the creation of companies, from the use of strategies that allowed them to solve the learning tasks.

The link of the content of the subject with the professional activity is established, the student found the need to vary the solution ways from the professionalization of the content, as well as the establishment of relations of the new content with the preceding one in processes linked to different companies of the locality. The results of the output pedagogical test were compared with those obtained in the input test in order to determine whether there were significant differences between the results obtained in the learning indexes of the content of the referred subject before and after applying the methodology, as shown in Figure 2.

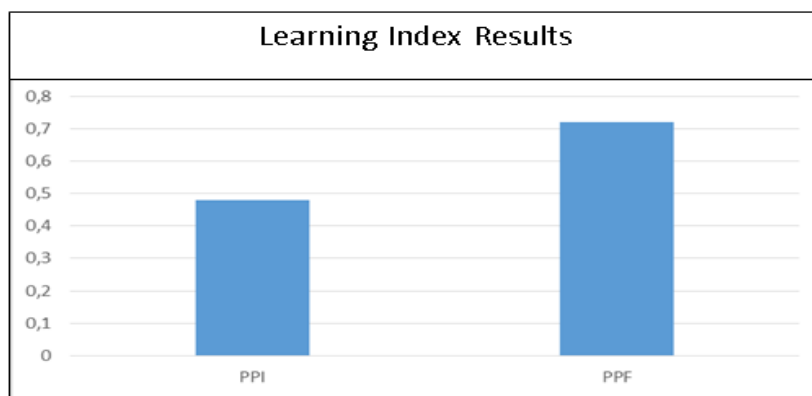


Figure 2. Comparative graph of the results of the learning level index of the administrative process according to the Initial Pedagogical Test (PPI) and the Final Pedagogical Test (PPF)

In this sense, the Wilcoxon signed-rank test was applied. As the probability value of the Wilcoxon sign test is $p=0.0 < 0.01 = \alpha$, then H_0 is rejected and H_1 is accepted, i.e., there are significant differences between students' learning before and after applying the methodology at 99% confidence. In addition, the mean of the results of the learning index of the subject content after applying the methodology is 0.72, much higher than that obtained before, which was 0.48 (Annex 19), so it is evident that the results obtained by the students were mainly due to the application of the methodology.

Conclusions

The didactic model of learning stimulation of the subject/learning unit Fundamentals of Administration, is formed by the subsystems called Projective conceptualization, Activation and Regulation of learning, in which relationships are established that characterize the logic of the teaching-learning process of said content from the relationships between the dynamic and static components, the conception of the teaching tasks, as well as the developmental relevance of said process, as a resulting quality, the one that is concretized in the methodology, through the application of the problem-solving method of professional simulation. The scientific evaluation of the results achieved corroborates the hypothesis that the implementation of a methodology, based on a didactic model of learning stimulation, which meets the developmental demands of contemporary teaching in the subject/learning unit Fundamentals of Administration, will allow raising the quality of students' learning.

References

- Abreu, R., y Soler, J. (2014). Didáctica de la Educación Técnica y Profesional. (Manuscrito sin publicar). Universidad de la Habana.
- Aguilar, Y. (2019). Dinámica del proceso de enseñanza-aprendizaje de la Práctica Laboral en la especialidad Construcción Civil. (Tesis doctoral). Universidad de Granma. Cuba.
- Álvarez, C. (1998). La escuela en la vida. La Habana: Pueblo y Educación.

- Cueva, J., García, Ch. y Martínez, O. (2020). La influencia del conectivismo para el uso de las TIC en el proceso enseñanza-aprendizaje(2020).Revista Dilemas Contemporáneos: Educación, Política y Valores. Año: VII Número: 2 Artículo no.:21 Período: 1ro de enero al 30 de abril del 2020. <http://www.dilemascontemporaneoseducacionpolitica y valores.com/>
- Ecuador. Secretaría Nacional de Planificación y Desarrollo. (2017). *Plan Nacional para el Buen Vivir 2017-2021 Planificamos para toda una vida*. Quito: SENPLADES
- Fernández, R., Alfonso, I. y González, R (2019). Procedimientos desarrolladores. Una vía para la gestión del conocimiento de la matemática en la Educación Primaria. Revista Dilemas Contemporáneos: Educación, política y valores. Año VII. Publicación No 1. Art No 24. [https:// dilemascontemporaneoseducaciónpolitica y valores.com/](https://dilemascontemporaneoseducaciónpolitica y valores.com/)
- Jiménez, D. (2018). Dinámica de apropiación del contenido instalaciones frigoríficas en el proceso de enseñanza-aprendizaje de la especialidad refrigeración. (Tesis doctoral). Universidad de Granma. Cuba.
- Marrero, I. (2018). El proceso de enseñanza – aprendizaje desarrollador desde una perspectiva no lineal. Revista Atlante. Cuadernos de Educación. <https://eumed. Net/rev/atlante/2018/aprendizaje desarrollador.>
- Miguel Ángel Medina Romero , Senior-Naveda Alexa, Edgar Salas Luzuriaga, Justina Isabel Prado-Juscamaita, Irene Deza y Falcón, Tomás Aznar Sánchez (2021). REMOTE WORK IN THE COVID-19 ERA: A HOLISTIC APPROACH, Journal of Language and Linguistic Studies, 17(4), 2384-2396.
- Moncayo, O. (2022). Metodología para la estimulación del aprendizaje en la Asignatura / Unidad de Aprendizaje Fundamentos de la Administración. (Tesis doctoral). Universidad de Granma. Cuba.
- Moncayo, O., Cano, J y Bustamante, F. (2020). Pedagogía desde una perspectiva desarrolladora para los profesores de la carrera Administración de Empresas. En revista Conrado. Vol. 16, No 74. (Mayo- junio) 248-253.<https://conrado.ucf.edu.cu/index.php/conrado/article/view/1358>
- Moncayo, O., Torres, V., Martínez, M., Pupo, Y., Tiá, M. y Pérez, G. (2020). La activación regulación del aprendizaje en la asignatura Fundamentos de la Administración. En revista Conrado. Vol 16, No74. (Mayo- junio) 266-275. <https://conrado.ucf.edu.cu/index.php/conrado/article/view/1361>
- Peña de la, G. y Velázquez, R (2018). Algunas reflexiones sobre la teoría general de los sistemas y el enfoque sistémico en las investigaciones científicas. Vol. 37. Núm. 2. Mayo-ago. Revista cubana de Educación Superior. <http:rces.uh.cu.SciElo. Cuba>
- Piñeiro Alonso, E. (2019) Metodología de trabajo independiente para la atención a las diferencias individuales en estudiantes de la Licenciatura en educación. Química. (Tesis doctoral). Universidad de Granma. Cuba.
- Riverón, D. (2020). La formación del procesamiento de la información económica como competencia en el estudiante de la especialidad contabilidad. (Tesis doctoral). Universidad de Granma. Cuba.
- Suryasa, I. W., Rodríguez-Gámez, M., & Koldoris, T. (2021). The COVID-19 pandemic. *International Journal of Health Sciences*, 5(2), vi-ix. <https://doi.org/10.53730/ijhs.v5n2.2937>
- Suryasa, I. W., Rodríguez-Gámez, M., & Koldoris, T. (2022). Post-pandemic health and its sustainability: Educational situation. *International Journal of Health Sciences*, 6(1), i-v. <https://doi.org/10.53730/ijhs.v6n1.5949>

- Tiá, M. (2014). Metodología para el tratamiento de las reacciones químicas en la ETP. (Tesis doctoral). Universidad de Granma. Cuba.
- Torres, E., Tiá, M., Pérez, G., y Paneque, M. (2022). El proceso de enseñanza – aprendizaje: lógica, dinámica y estimulación del aprendizaje. Revista Santiago.157. ISSN 2227-8513
- Valle, C. (2010). Algunas formas de salida de los resultados científicos y vías que se han utilizado para su obtención. (Manuscrito sin publicar). Universidad de la Habana.
- Vigotsky, L. S. (1988). Pensamiento y lenguaje. La Habana: Pueblo y Educación.