

*Gestión del conocimiento de la localidad en la dinámica de  
la formación del agrónomo*  
*Management of local knowledge in the dynamics of  
agronomist training*

**Angelina Parra de la-Paz; Yamilé Brito -Sierra**

Universidad de Oriente, Cuba

**Correo(s) electrónico(s)**

angelinap@uo.edu.cu

yamilebs@uo.edu.cu

**ORCID:** <https://orcid.org/0000-0002-9317-5242>

<https://orcid.org/0000-0003-3772-2069>

**Recibido:** 22 de octubre de 2020

**Aceptado:** 6 de noviembre de 2020

## **Resumen**

La preparación del agrónomo constituye un reto importante para la formación, a partir de considerar que desde el proceso de formación debe ser capaz de integrar saberes para enfrentar los principales problemas en las diferentes esferas de actuación, de ahí que el trabajo tiene como objetivo argumentar la gestión de los contenidos necesarios y suficientes para resolver problemas de la realidad agroproductiva desde el contexto docente - productivo sobre la base de los criterios de sostenibilidad y sustentabilidad, propiciando un mayor nivel de preparación en los educandos.

**Palabras clave:** Contenidos agrotécnicos; Conocimientos agropecuarios; Conocimientos ambientales; Procesos profesionales agropecuarios

## **Abstract**

The preparation of the agronomist constitutes an important challenge for the formation, from considering that from the process of formation it must be able to integrate knowledge to face the main problems in the different spheres of performance, for that reason the work has as objective to argue the management of the necessary and sufficient contents to solve problems of the agro productive reality

from the educational - productive context on the base of the criteria of sustainability and sustainability, propitiating a greater level of preparation in the students.

**Keywords:** Agro technical contents; Agricultural knowledge; Environmental knowledge; Professional agricultural processes

## **Introduction**

The socioeconomic, scientific, technological and cultural transformations that humanity has been facing in recent decades pose challenges for professional training, hence the need to improve knowledge management from the perspective of agricultural teacher training, as a response to growing social demands, which are increasingly demanding greater professional quality.

Hence, teacher training has become an urgent issue for today's society and in particular for teachers in the agricultural career, given the importance of agricultural development for the food security of the country and the planet, and for human subsistence. This implies understanding the reality of agricultural production as an integrated whole, which is a challenge for professional training.

At present, the results of the accumulated pedagogical experience and as part of the application of research methods, some deficiencies were found in this training process that affect its quality and relevance and with it the professional performance of the students in the solution of problems of a technical and pedagogical nature that are presented to them in their contexts of action. Among these are: fragmented and disciplinary educational conception and practice in the teaching of content, insufficient conscious application of agricultural production techniques and technologies that are not aggressive to the environment, weak systematization of agro-technical and pedagogical content, based on the potentialities offered by the level and year; insufficient establishment of causal relationships by the disciplines to explain facts, processes and phenomena of the agro-productive reality.

Therefore, the problem is concrete in how to explain from didactics the need of a knowledge management that allows the development of a teaching-learning process in the formation dynamics where arguments are announced that guarantee the integration, from analytical-synthetic processes.

Globalization, changes in business paradigms and the evolution of information technologies place education in the role of quality competitiveness that leads to knowledge management by improving the quality of the teaching process.

---

Considering knowledge management, as a definition object of study by various authors, without a single definition, but rather explained in different ways, for example, Bueno (1999), defines it as "the function that plans, coordinates and controls the flows of knowledge that are produced in the company in relation to its activities and its environment in order to create essential competencies" (p. 49), Brookings (1996), considers it "an area dedicated to the direction of tactics and strategies for the management of intangible human resources" (p. 68), Wiig (1997), as "intellectual capital management focused on how to publicize and manage knowledge-related activities, with the function of planning, implementing and controlling all activities" (p. 102), Minakata (2009), defines it as "the processes of creation and transformation of the organization's knowledge-learning, dynamically and continuously incorporating the know-how of people in the personal-group-organizational "narrative" fabric; (p. 80).

Pamela (2012), considers it an "organizational process. All these authors have different points of view but they revolve around the management of the flow of knowledge of the intellectuals who work in a company to transform it into an intellectual asset that provides benefits and can be shared. (p. 64).

Ariosto's dictionary (1975), defines it as "action and effect of managing, that is, to do diligences conducive to the achievement of some objective", definition that the author assumes for this research.

On the other hand, Horruitiner (2007), in his work, proposes:

The process of formation. Its characteristics, she qualifies the methodological work as the didactic management of the training process, which in the specificity of the agricultural sector acquires particular significance, as it is part of the labor content of this future professional to investigate both the theoretical and practical contents. Hence the need to go deeper into knowledge management. (p. 82).

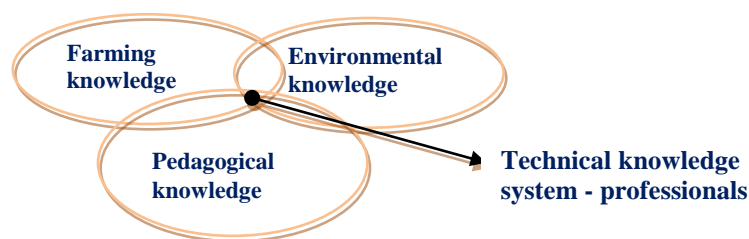
## **Development**

The management of technical-professional knowledge as a component of the model of training dynamics by professional agricultural processes, takes place during the entire process of teacher training, since it is conceived as a constant need to search or research information to solve professional problems that arise or are raised in training.

In particular, the system of technical-professional knowledge is integrated by agricultural, pedagogical and environmental knowledge that is expressed in the training of a teacher of this career, which finds a

double character in the professional, since the curriculum of broad profile provides a preparation to work as a teacher and as a specialist in agricultural production and even as an environmental manager.

Figure.1



**Figure: 1 Technical knowledge - professional**

The agricultural knowledge is synthesized from the contributions of different natural sciences, such as Soil Science, which provides knowledge about the origin, formation, evolution, properties of soils for productive purposes; Botany and Vegetable Physiology, which include anatomophysiological studies that include the structure-function relationship of plants, the cohesive theory of transpiration; Animal Anatomy and Physiology, with anatomophysiological studies from the structure-function relationship of the different systems of organs; Entomology, with the study of insects.

Likewise, Zootechnology, which comprises technological systems according to animals of economic interest; Genetics, which offers the basis for the improvement of the qualities of vegetable and animal species; Microbiology, with the study of harmful and beneficial microorganisms in plants and animals; Agro-ecology, which deals with the characteristics of the environment in which plants and animals grow; and Ecology, which studies the relationships of living beings among them and with their environment, as well as the defense and protection of nature and the environment, among others.

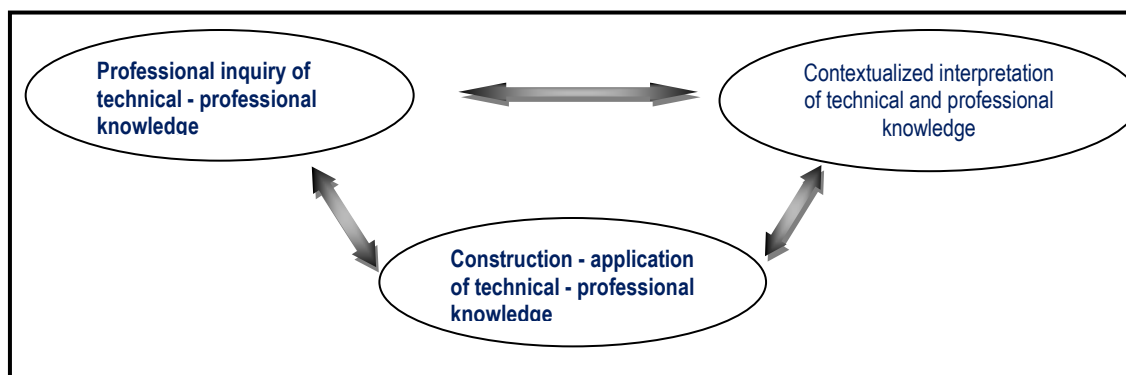
The environmental knowledge is assumed from the domain of the relations that are established between the factors of the climate, the properties of the ground and conditions of the relief, the adaptations of the plants and animals, that mediated by the human action are specified in the relation climate - ground - plant - animal - man, in the dynamics of the agricultural professional processes. These acquire a real sense insofar as they influence the dynamics of production, so that in order to address professional agricultural processes, it is necessary to examine in depth the environmental manifestations of the

context.

Pedagogical knowledge is confined to the educational sciences, such as pedagogy itself, which offers information on the treatment of its fundamental categories: training, instruction, education and the other components of its theoretical framework; Didactics, which allows us to understand the dynamics of the teaching-learning process through professional processes; Psychology, which provides theoretical and practical knowledge, and broadens our understanding of how students act based on how they feel, think, know and learn to live with the agricultural teaching environment that surrounds them, to improve communication, to understand the problems derived from learning the contents of the profession, the processes related to memory, cognition and language in this environment. Sociology is also taken into account to understand the dialectics of the environment in training and professional processes and interpersonal and inter-institutional relations, in addition to other sciences.

For all the above reasons, it can be summarized that the technical-professional knowledge is based on all the knowledge provided by the agricultural and pedagogical sciences, which from an environmental perspective make up the training curriculum of the teachers of the Bachelor's degree in Education, Agricultural specialty.

From the integration of technical-professional knowledge, it is possible to approach the management of technical-professional knowledge, which is structured in three components: the professional inquiry of technical-professional knowledge, the contextualized interpretation of technical-professional knowledge that leads to a greater and better understanding of reality (breadth and depth) and the materialization of "learning to learn". Figure. 2.



The professional investigation of technical-professional knowledge requires multiple sources of

information from which educators understand the essence of professional processes and, in turn, professionalize the contents of their subjects with which students learn to relate, find and establish connections, which will allow them to build new relationships, facilitating their adaptation to changing labor needs and a computerized society, where individuals will have to discover how to penetrate its essence to extract and elaborate new knowledge from the flow of available information. In this sense, this process is inherent to all the actors involved in training, who will necessarily have to explore their own knowledge and determine its potentialities and shortcomings.

In synthesis, the professional inquiry of the technical-professional knowledge is a process of search of internal and external knowledge based on the questioning and the reflexive dialogue as a way of access and transformation of the knowledge that complement the technical-professional preparation of the actors of the formation process, through different ways as the research, the observation, the exchange and the study of printed and digital bibliographic material.

Contextualized interpretation depends on the background training and learning needs of the year of study, as well as on the investigation of the problems in the context (school, basic experimental area, company), which is the theoretical basis for contextualized interpretation.

This process helps the student as a social being that potentially generates development, to learn to differentiate and appreciate the beauty of nature, to stimulate his creative imagination, to internalize the impact of climate variables in professional training and to establish sustainable and sustainable alternatives that can lead to productive improvements from the professional agricultural processes.

The contextualized interpretation of technical-professional knowledge is then defined as an analytical-reflexive process, in context, of the information obtained in the investigation to unravel the logic of the relations that occur in this context from its particularities and to elaborate conclusions about the elements, relations and reasoning in correspondence with the learning situations of the agro productive reality.

An essential element to analyze learning situations in agricultural contexts is the co-construction-application of technical-professional knowledge, which has as its purpose the solution of problems of the profession and becomes a dynamic process that is complemented by synthesizing the professional inquiry of technical-professional knowledge and the contextualized interpretation of technical-professional knowledge, leading to guarantee the appropriation of knowledge of Agricultural and

---

Pedagogical Sciences and the environmental, promoting a greater and better understanding of reality.

This process of co-construction-application of the technical-professional knowledge that is materialized in the design of the dynamics learning - doing and doing - learning, leads to the collaborative construction of the content of professional training, given the gradual development of the intellect of the learners and the change of roles and implies the link study - work and theory - practice.

In the design of the dynamics of the learning-by-doing relationship, learning is considered in modeled contexts, taking shape in the training through practical classes, with the proposal of the use of videos, specialized areas, specialized laboratories or other means, always following the logic of the professional pedagogical process, which allows it later to apply the knowledge learned to real learning situations.

On the other hand, the design of the dynamics of the relationship between doing and learning, is fundamentally considered the development of professional skills and competences, which prepare the student to apply them in different situations and contexts; this relationship is considered much more complex than the previous one and will need to be developed in real learning contexts, following the logic of the productive process, that is, from this relationship the technical-professional knowledge can be co-constructed, from what the student can discover in doing.

Within the nature of the dynamics of training by processes, it is necessary to take into account the relationship between the university and the labor entity (micro - university / company), which are the contexts of professional training in which the objectives of the training are materialized and consolidated, considering the problematization of the dynamics of the previous relationships (learning - doing and doing - learning) even when the university remains as the guiding training center and as the training center of the tutors and instructors of the micro university and the agricultural companies.

In the first, the student participates as an observer in a process of familiarization, which contributes in a cooperative way to build the learning of the Pedagogical and Agricultural Sciences; in the second, he or she plays the role of the teacher in the microuniversity, with faculties to apply the entire system of pedagogical, agricultural and environmental knowledge, which from the learning process was able to internalize, to help solve problems of the educational-productive context from an interdisciplinary and professional concept.

When you interact in a production company there is a process of co-construction of the typical

---

---

knowledge of the specialty, that is, this space facilitates you to build your own knowledge from solving real learning situations.

Therefore, both relationships contribute to the co-construction and application of agricultural teaching knowledge, in addition to encouraging the motivation of students towards the profession, to strengthen the values of responsibility and industriousness in the professional work; to strengthen the study-work link in the profession, to establish an adequate correspondence between thinking, feeling, being and doing, as well as to demonstrate greater strength and independence in individual and cooperative performance during professional performance.

This process of co-construction-application of technical-professional knowledge in a general way allows the student to understand that daily practice facilitates the projecting of new learning needs in order to perfect his/her professional preparation. Hence the need to prepare the student to design intervention strategies that are socially just, culturally acceptable, naturally healthy, legally permitted and economically viable, leading to the sustainability and sustainability of agricultural ecosystems and educational contexts.

## Conclusions

The management of technical-professional knowledge is a process that ensures the development and application of knowledge that professional processes contribute to the teaching-learning process, through the dialectic relationship between inquiry, co-construction-application and contextualized interpretation, which leads to a greater and better understanding of reality, as well as the materialization of learning to learn.

## Bibliographic references

Arellano, M. F. (2015). Gestión del conocimiento como estrategia para lograr ventajas competitivas en las organizaciones petroleras. *Orbis*, 10(30). Recuperado de: <https://www.redalyc.org/articulo.oa?id=70932870004>

Diccionario Aristo ilustrado de la lengua española (1975). Ramón Sopena. Barcelona.

Artiles, L. y Artiles, S. (2005). *Gestión del conocimiento y cooperación internacional en el ámbito universitario*. Trabajo presentado en el taller Gestión del conocimiento para la cooperación y movilización de recursos en ambiente académico, Lima, Perú.



Braslavsky, C. (1987). Un Desafío fundamental de la Educación en Latinoamérica durante los próximos 25 años: Construir su destino. *Revista Interamericana de Desarrollo Educativo* 31 (101), 67- 80.

Horrutiner, P. (2007). *El proceso de formación. Sus características*. La Habana: Universitaria.

Izquierdo, J. M. (2004). *La gestión académica del proceso docente educativo en la educación superior sustentada en las tecnologías de la información y las comunicaciones*. (Tesis de Doctorado). Centro de estudios de educación superior “Manuel F. Gran”, Universidad de Oriente, Santiago de Cuba.

Minakata, A. (2009). Gestión del conocimiento en educación y transformación de la escuela. *Revista Electrónica Sinéctica*, (32). Recuperado de <http://redalyc.uaemex.mx/pdf/998/99812141008.pdf>

Nova, A. (2006). *La agricultura en Cuba*. La Habana, Cuba: Ciencias Sociales.

*Tendencias en la gestión del conocimiento*. (2015). Recuperado de <http://www.gestiopolis.com/5-tendencias-en-la-gestion-del-conocimiento/>