

La integración de contenidos en función de la tecnología

Content integration based on technology

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Resumen

El trabajo aborda la temática de la formación profesional, a partir del empleo de métodos y técnicas de la investigación educativa, respondiendo a la necesidad de formar técnicos medios de la especialidad Agronomía de Montaña identificados con su profesión y dotados de conocimientos, habilidades y valores, en correspondencia con las exigencias del Modelo de escuela politécnica actual. En este orden, el presente artículo se dirige a presentar ideas rectoras para la preparación de los profesores en función de la formación profesional de los educandos y transformar la realidad educativa. Se emplearon métodos del nivel teórico y empíricos. La evaluación de los resultados, a partir de la puesta en la práctica demuestra su conveniencia y viabilidad.

Palabras clave: Ideas rectoras; Formación profesional; Preparación; Educación Técnica y Profesional.

Summary

The work addresses the issue of professional training, from the use of methods and techniques of educational research, responding to the need to train middle technicians of the Mountain Agronomy specialty, identified with their profession and endowed with knowledge, skills and values, in correspondence with the requirements of the current polytechnic school model. In this order, this article is aimed at presenting guiding ideas for the preparation of teachers according to the professional training of students and transforming the educational reality. Theoretical and empirical methods were used. The evaluation of the results, based on the implementation, demonstrates its convenience and feasibility.

Keywords: Guiding ideas; Vocational training; Preparation; Technical and Professional Education

Introduction

The article deals with the integration of contents for the training of the medium technician in the specialty of Mountain Agronomy from the preparation of teachers from the methodological work, with the purpose of improving and thus satisfying the social need to achieve a professional capable of responding with quality to the demands of today's world and of Cuban society in particular.

For this reason, the current educational transformations that have occurred in the educational sector as a result of the Third Improvement, the training of professionals in the agricultural sector is fundamental and in fact constitutes a priority of Technical and Vocational Education (TVE).

In Cuba, since January 1, 1959, tasks were outlined in this direction, giving importance to the professional training of adolescents and young people, recognizing the polytechnic school as a fundamental link in this work.

Technical and Professional Education has new challenges, the training of students in agricultural and livestock specialties, to achieve a profitable, sustainable and competitive agriculture, which preserves the environment for this and future generations.

In line with this reality, the training of competent workers, identified with their profession, characterized by possessing a political and ideological, general, economic and technological culture, is a dynamic and changing process that, from the educational sciences, is consistent with the III Improvement of the Cuban educational system, a priority of the Ministry of Education (MINED).

From this perspective, Technical and Professional Education demands teachers prepared to direct the effort in the formation of professionals who respond to the demands of the labor market, with love and attachment to the profession, with scientific-technical knowledge, values, motivations and interests for the profession, as a result of the level of preparation reached in the direction of the teaching-educational process.

The above allows for new demands to be placed on Technical and Professional Education, whose purpose is to train a patriotic, comprehensive, competent and broad-profiled high school professional, which is fully integrated into society and is an active agent of its improvement.

MINED (2020), establishes as mission:

To scientifically direct the initial and continuous training of the qualified middle level work force, as well as the training of the population, through the integration of the educational institution-labor entity, as a dynamic element of the economic and social development of the country. (p.2).

This idea reveals the need to carry out a consistent and systematic work with teachers, who should intervene in the training of the Medium Technician in Mountain Agronomy in correspondence with the model of the professional. From this position, an integration of contents is required, which in its essence contribute to the formation of a technician with knowledge, skills and values capable of facing the demands of our society, the production of food in a sustainable way for the achievement of food sovereignty.

In the article, guiding ideas are proposed to strengthen the preparation of teachers in terms of professional training in the students of the Mountain Agronomy specialty.

Development

The process of permanent training of education professionals requires the continuous search for spaces and alternatives that ensure the systematic exchange of knowledge among teachers in order to successfully develop their training work with students.

From this perspective, Technical and Professional Education demands teachers prepared to direct the effort in the formation of professionals who respond to the demands of the labor market, with love and attachment to the profession, with scientific-technical knowledge, values, motivations and interests for the profession, as a result of the level of preparation reached in the direction of the teaching-educational process.

This idea reveals the need for consistent and systematic work on the part of the personnel who must transmit knowledge, reinforce and systematize the motivation, interests and professional skills of the students. From this position, it is required to improve the preparation of teachers to assume the deficiencies that in this sense the learners have and that compromises the result of the teaching-educational process and the future exercise of their profession.

From the theoretical systematization carried out, it was found in the studies of (Acosta, 2008; Creagh, 2022; Simao and López, 2017; Silvestre, 2003; Valle, 2012 and Villalón, 2018), an element that within the methodology as a scientific result is applicable for Pedagogical Sciences, which is shared in this research, the conception of guiding ideas, because from the pedagogical and organizational point of view they enrich the logical, sequential and systemic ordering of the preparation process for integration of contents.

Kopnin (1983), from the dialectical materialist philosophy, expresses that the idea:

It is a form of knowledge, which reflects reality and is linked to experience, expresses in a concentrated, synthetic form, the achievements of scientific work and the contradiction between its

objective content and the subjective. It contains in itself the tendency to practical realization in order to transform reality. (p. 355).

The contributions made by the author are considered important, since he sees ideas as the development of things in the midst of all their links and abstractions, that is, in the midst of their inadequacies and opportunities. The idea is the representation of a thing in the imagination, from a notion that one has of something, they have to have a clear, precise objective so that it can be seen what it contains within itself, and can lead to educational work from a position to educate either political or instructive, from the concrete historical conditions in which they are developed, as they are the fundamental lines of activity that trace the guidelines to be taken into account.

All this allows recognizing that the idea is the reflection of reality, although it does not always show things as they exist, but reflects the development of things in the midst of all its concatenations, judgments and reflections, that is, not the simple reality as it exists, but in the midst of its deprivations and possibilities, since the idea leads to the development of the phenomena of reality, in addition, it not only reflects what exists, but also what should be.

With these arguments, Cobas (2008) defines "guiding ideas as the system of representations that govern the theoretical and methodological elements (...)" (p. 81). He recognizes that the guiding ideas are essential elements for the preparation of teachers; they trace the guidelines to be taken into account for the integration of contents in the specialty of Mountain Agronomy.

The aforementioned allows specifying that the guiding ideas are the system of representation that guide the methodology presented, they are those elements that, in the organizational, didactic-methodological order, guide more effectively the process under study, they have a systemic character that is specified when specifying, from the logic of their relational dynamics, the communicative pedagogical actions that arise from them for their practical implementation. They turn out to be an expression of what and how should be done in the process explained with the use of the possibilities of the interrelations that are produced from the teaching-educational process.

In this research, it is agreed that the guiding ideas govern the actions and guidelines to be followed in the preparation of teachers for the integration of the content in the subjects of Mountain Agronomy, and they also indicate the knowledge and guide the know-how in the proposed methodology.

The aforementioned authors agree that the guiding ideas guide what is wanted and offer a theoretical-methodological basis that allows the sequential ordering. Hence, for the purposes of this research, this element facilitates the understanding and guides the preparation of teachers for the process of integration of content in the specialty of Mountain Agronomy at the Agricultural Polytechnic Institute "Horacio Matheu Orihuela".

Therefore, the guiding ideas in the methodology are contextualized for the preparation of teachers in order to contribute to the integration process of the contents in the specialty of Mountain Agronomy.

The following are considered guiding ideas:

For the methodological concretion of the theoretical foundations, as well as, of the methodology operation principles, it is considered pertinent to propose a system of general and integrating ideas, called "guiding ideas", which are a way to orient and guide, from the theoretical and methodological, the implementation in the educational practice of this scientific result.

In this sense, it is argued, from Ponce (2014): "a guiding idea is the conceptual way to approach a project. It is applicable to a work; to a design (...) the way to transmit a guiding idea can be through a sketch (...)" (p.56). It is learned from this definition that the guiding ideas are the maximum generalizations of essentialities of the content for the preparation of teachers in the integration of the content in the specialty of Mountain Agronomy.

It is assumed that the guiding ideas allow tracing the fundamental guidelines; therefore, they are conceived as a starting point in the presentation of the value of the contents of the preparation actions as part of the personal and professional development of teachers; since their conscious internalization occurs throughout the preparation, through evaluative, reflective and critical activities of their content for the professional performance in Technical and Vocational Education.

The guiding ideas constitute a significant way to methodologically organize the teachers' preparation process, orienting where the preparation process and the methodological work of the departments should be directed. For this reason, it guides from the theoretical and methodological point of view, the practical implementation of the methodology in question.

It is assumed that the guiding ideas allow tracing the fundamental guidelines; therefore, they are conceived as a starting point in the preparation of teachers for the integration of contents in the specialty of Mountain Agronomy as part of the personal and professional development of students; since their conscious internalization occurs throughout the preparation, through activities that promote the integration of contents for their professional performance.

The guiding ideas constitute a pertinent way to methodologically organize the process of content integration in the specialty of Mountain Agronomy; they orient the methodological work where the preparation of teachers takes place, since they guide from the theoretical and methodological point of view.

The guiding ideas in this work are:

1. The preparation of the Technical and Professional Education teacher should be directed towards the integration process of the Mountain Agronomy specialty content, which requires a rigorous methodological organization of the actions to be undertaken for this purpose.

Basis: in the framework of the current educational transformations of Cuban Technical and Professional Education and the improvement of the teachers' preparation process, it is a response to the social demands to improve the teaching-learning process based on the integration of Mountain Agronomy specialty contents and to raise the quality of the students' education; hence, the need to improve the integration of contents for the formation of a medium technician in Mountain Agronomy prepared taking into account the professional's model.

The preparation for the integration of content should not be an improvised activity or one more activity of the teacher's work; but should be considered a first order task that should be carried out in a systematic, planned and controlled way in the teaching-learning process of Technical and Vocational Education. Therefore, the preparation of the teacher of the Mountain Agronomy specialty must be an imminent and direct task in the Polytechnic Agricultural Institute, due to the social priority nature of the specialty. To this end, the following requirements are highlighted:

- The technical department must have a work plan that responds to the organization of the activities to be carried out.
- It should be determined, in the first month of the course, the preparation actions to be carried out for the integration of the specialty content of Mountain Agronomy, as well as the different forms of organization of the teaching-learning process, in an orderly manner, oriented by months and the determination of the objectives, contents, participants, exact date and the evaluation to be carried out.
- The preparation as a management process must contain all the functions that are essential to a conscious activity: planning, organization, execution, evaluation and control; according to the group possibilities of participation (curricular and extra-curricular investigative forms).

2. The preparation requires a teacher who is scientifically prepared in Technical and Vocational Education and who performs the teaching function with quality.

Foundations: The preparation is important because it affects not only the personal life of teachers, but also their professional life, so that they appropriate methods, ways and procedures to train students in knowledge, skills and values related to the profession from the integration of content in the specialty of Mountain Agronomy. It is therefore urgent to have knowledge of the subjects to be integrated, hence

the importance of the teacher being of this specialty to appropriate these aspects in a safe and updated way.

The group of teachers of these subjects is in charge of coordinating, planning, executing and evaluating this preparation; it is responsible for achieving a scientific preparation that, in the theoretical and methodological order, ensures an adequate level of scientificity to face this work; besides, to eliminate the main limitations that in this order the pedagogical diagnosis of the group with which they are going to work shows. On this basis, the following requirements stand out:

- There must be a previous preparation to each teacher in the didactic, pedagogical, methodological and scientific order, to impart these contents related to the integration of the content in specialty Mountain Agronomy.
- To specify the system of objectives-content-skills and values in which the teacher must be prepared as part of his methodological work in order to transmit them to the tutors of the work entity in the training and to the students in the teaching-learning process in the contexts of action.
- Determine precisely the type of activity, the objective-content to be developed, the person in charge and the date on which it will be carried out.

3. Preparation requires a developmental teaching-learning process through the dynamics of the objective-content-method components.

Fundamentals: The dynamics of the teaching-learning process (PDE), of the preparation of the teacher of Technical and Professional Education, is concretized in the dialectic triad that is established between the content-method (procedures)-learning tasks based on the relationships between the non-personal components of said process. This triad should lead to achieve a developmental dynamic during the Educational Teaching Process of the proposed preparation, which allows effective transformations from the theoretical, practical and attitudinal point of view in the teachers.

It is not a matter of ignoring the guiding role of the objective in the Educational Teaching Process, but of deepening during this process, in the content of the preparation through productive methods and learning tasks that materialize in a developmental PEA with the learners, in accordance with the purposes proposed in this research. To this end, the following requirements must be met:

- Hierarchize the use of productive methods (debate, workshop) that stimulate the intellectual activity of teachers, for the analysis and mastery of the contents in the integration of content specialty Mountain Agronomy, which are proposed through a system of learning tasks.

- Use learning techniques (agreeing-disagreeing, analogies, logical and divergent thinking skills, among others) that allow analyzing the contents of the preparation.

To use productive procedures and methods (communicative exchange, confrontation of ideas, opposition, reflection, debate), to provoke an intense intellectual activity in the teachers, in order to integrate the content of the Mountain Agronomy specialty.

4. The integration of contents and its direction in the teaching-educational process of the specialty of Mountain Agronomy in the Polytechnic Agricultural Institute.

The formative process of the students requires a teacher prepared at the theoretical and methodological level, to transmit knowledge, develop skills, abilities, capacities, competences not only in his subject, but also in the others, as well as in the cultural, ideopolitical and psycho-pedagogical aspects, who can demonstrate his competence from his professional role.

One of the main pedagogical problems faced today by the Polytechnic Agricultural Institute is precisely related to the level of integration of contents that allows a professional training, with quality. Therefore, the preparation of the teacher of the specialty of Mountain Agronomy must be an imminent and direct task in each Agricultural Polytechnic Institute, due to the social priority nature of the specialties studied.

That is to say, the teacher of the Mountain Agronomy specialty must be prepared, have knowledge of interdisciplinarity to achieve the integration of contents, taking into account the characteristics of Technical and Professional Education and the learners, It should also diagnose them with methods and techniques to know the level of preparation about the specialty and the role of the different forms of organization of the teaching-educational process (in the teaching, extracurricular and extracurricular forms), of the student and youth organization, of the family, the labor entity, the community to support the Polytechnic Agricultural Institute, the methodological work and the improvement in this matter, among others.

The preparation of the tutors of the work entities is a necessity in the process of integration of contents in the specialty of Mountain Agronomy in the Polytechnic Agricultural Institute

The tutors are the fundamental representatives in the formative process of the students, their exemplary professionalism and their ways of acting have a wide repercussion in the activity carried out in the work entities, which plays an important role in the integration of contents to reinforce from their direction the interest and motivation towards the profession.

The tutor of the labor entity is an experienced worker, knowledgeable of the profession or trade in which the student in training intends to work in the future; he is a specialist in production or services,

who has a scientific-technical preparation that allows him to facilitate the professional training of the student.

The tutor of the labor entity plays a fundamental role in the teaching-educational process, with a close link between the instructive, educational and developmental aspects, as well as the necessary interrelation that must exist between the academic, labor and research aspects in the context of the relationship between the Agricultural Polytechnic Institute and the labor entity, for the integration of contents in the professional training of the students in Technical and Professional Education.

5. The Polytechnic Agricultural Institute is in charge of directing the process of preparation of teachers for the integration of contents.

The development of the process of preparation of teachers for the integration of contents in the specialty of Mountain Agronomy requires the socialization and awareness of the teachers of the Agricultural Polytechnic Institute for the achievement of the objectives set by the National Education System and, especially, by the subsystem of Technical and Professional Education.

It is unavoidable a real preparation of the teachers of the different subjects and years, of the tutors of labor entity so that they contribute to the preparation of the students from the integration of contents that enable to form professional abilities from the consolidation of motives, and interests towards the profession, from the existing conditions in their context of performance, which enable to find the essential ways for the development of the process of professional formation in the specialty Mountain Agronomy.

Precisely, society has entrusted the Polytechnic Agricultural Institute with the social responsibility of training middle-level technicians in the Mountain Agronomy specialty, this task cannot be delegated, therefore it is up to him/her to direct the training process in its different forms: teaching, extra-teaching and extra-school, the teacher must systematically diagnose the professional sphere of the students and the contents to be integrated and thus pedagogically predict the contents to be integrated.

6. The preparation of the tutors of the labor entities is a necessity the integration of contents in the specialty of Agronomy of the Polytechnic Agricultural Institute.

The relationship between professional training and the link between study and work in production was pointed out by the classics of Marxism, recognizing the theory-practice link in terms of the development of personal skills and qualities, related to productive activity, eliminating the essential differences between physical and intellectual work.

In this sense, the Marxist-Leninist and Martian ideas of the study-work link are concretized in the thinking of Castro, F. (1985), by recognizing from the first years of the Revolution, the need to "take

this principle to the technological [...] Every factory that is built in this country, the corresponding school facility must be built next to it" (p. 2). (p. 2).

This makes it possible to recognize the social character of the theory-practice link, in real production conditions, an ideal context for the integration of contents in the training of the student in the specialty of Mountain Agronomy.

That is why the tutors of the labor entity are fundamental figures in the formative process of the students, their exemplary professionalism and their modes of action have wide repercussions in the activity carried out in the labor entities, which plays an important role in the integration of contents, by reinforcing from their direction the interest and motivation towards the profession.

For Abreu (2015) the tutor of the labor entity is:

(...) that experienced worker who represents the profession or trade to which the student aspires, a specialist in production or services, with a consistent attitude towards the principles of the Revolution..., who possesses a psycho-pedagogical preparation that allows him/her to facilitate the comprehensive technical-professional training and development of the competent worker. (p. 64).

This definition shows the significance of the tutor of the labor entity in the teaching-educational process, with a close link between the instructive, educational and developmental aspects, as well as the necessary interrelation that should exist between the academic, labor and research aspects in the context of the integration of the Agricultural Polytechnic Institute and the labor entity, where the integration of contents for the professional training of students in Technical and Professional Education takes place.

The tutor must have a basic knowledge of the discipline, the organization and norms of the institution, the curriculum of the specialty, the most common academic difficulties of the student, as well as the activities and resources available in the institution. In addition, the tutor must be a responsible person, with a clear vocation for teaching, generous to help the students in the improvement of their academic experiences and with a code of ethics.

According to the basic skills that a tutor should possess, the ability to logically organize the student's work, the capacity to integrate the contents demonstrating knowledge of the subjects and to awaken the interest of the students, the ability to interact with them, respect, and to achieve their academic development.

Care should be taken not to overload the tutor with theoretical content, therefore, socialization workshops, brochures, worksheets, short articles, participation in methodological activities of the different subjects, carrying out activities in the work entity and in the Agricultural Polytechnic Institute,

are some examples that can help the tutor, depending on their specialization and professional level, postgraduate courses, seminars, scientific events, among others, can also be established.

The aim is to provide the tutors of the working entity with basic knowledge on content integration. Their preparation should be systematic, allowing them to seek alternatives for the achievement of the proposed objective, the professional training of the student in the specialty of Mountain Agronomy.

Conclusions

The proposed guiding ideas constitute a way for the preparation of teachers in the professional training of the students of the Mountain Agronomy specialty in the different forms of organization of the pedagogical process. They strengthen the link between the significant contexts of action such as school, family and community. They provide the integration of contents which allowed the adequate development of teaching-learning of the students.

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