

Dinámica de trabajo independiente en la clase encuentro de Mecanización Agropecuaria Dynamics of the independent work at the classroom Mecanización's encounter Agricultural

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Resumen

El artículo aborda elementos teóricos de la dinámica del trabajo independiente en la modalidad semipresencial. Basado en las problemáticas detectadas en el diagnóstico del conocimiento de la asignatura Mecanización Agropecuaria en el 3er año de la carrera Licenciatura en Agropecuaria, resultados de controles a clases y el trabajo metodológico en la atención de las necesidades didácticas y metodológicas de los profesores. Se proponen tareas docentes a partir del análisis de documentos, acciones a ejecutar por profesores y estudiantes para la dirección del aprendizaje con carácter problematizador y enfoque profesional, con énfasis en el tratamiento al trabajo independiente durante la clase.

Palabras clave: Preparación de suelos; Arados; Implementos agrícolas; Roturación, Multiarado

Abstract

The article deals with theoretical elements of the dynamics of independent work in the semi-presential mode. It is based on the problems detected in the diagnosis of the knowledge of the subject Agricultural Mechanization in the 3rd year of the degree in Agriculture and Livestock, results of controls to classes and the methodological work in the attention of the didactic and methodological needs of the teachers. Teaching tasks are proposed from the analysis of documents, actions to be executed by teachers and students for the direction of learning with a problematic character and professional approach, with emphasis on the treatment of independent work during class.

Keywords: Soil preparation; Plows; Agricultural implements; Plow, Multiplow

Introduction

Cuban education demands are meaning from the conditions in which the world is developed and the demands of society, that is why it is essential that school institutions form a human being whose model is closer to the needs of the world and the country in which he lives.

It is precisely higher education that guarantees a solid scientific-technical and humanistic formation with high ideological values, with the purpose of achieving independent revolutionary and creative professionals, so that they can successfully perform in the diverse sectors of the economy and society in general.

This becomes relevant in the fundamental space of the universalization of higher education, which is concretized in the Municipal University Centers (CUM), which implies the need to perfect the preparation of the teachers, starting with the semi presential modality, taking into account that this one is characterized by a minor teaching load and this way it is declared by the Ministry of Higher Education (2018), "(...) for what the presence of the students with their teachers in the foreseen class activities is reduced" (p.5)

Therefore, the class must become a creative art for the student with an adequate scientific-ideological orientation, which is essential for the realization of his independent work. It is a priority the correct planning, orientation and control of the independent work, to raise the level of self preparation of the students and the quality of their formation.

Pedagogical practice has shown that there are shortcomings in the methodological work of the Disciplinary groups, aimed at the treatment of independent work, there is no proper planning and guidance during the encounter class, accompanied by inadequate planning of the study guide or tasks to be performed by the student. Evidenced in the results of the controls to classes and the methodological work towards

attention to the didactic and methodological needs of teachers, where it was found that there is a lack of precision in planning the objectives to be achieved and the tasks to be carried out that respond to professional problems and contextual solutions.

The present work intends to propose teaching tasks for the subject Agricultural Mechanization in order to perfect the dynamics of planning and orientation of independent work, starting from an encounter class.

Development

According to the Ministerial Resolution 2/2018, which regulates the teaching and methodological work of higher education, in its article 133, it states that the encounter class is the type of class that aims to clarify the doubts corresponding to the contents and activities previously studied by the students; discuss and exercise these contents and evaluate their compliance; as well as explain the essential aspects of the new content and guide with clarity and precision the independent work that students must do to achieve an adequate mastery of them.

Therefore, it is considered that the most important mission that the teacher has in the class meeting is to contribute to the development of cognitive independence of students and, in turn, encourage the development of values that enhance it, so that they can apply it in their professional lives.

Therefore, independent work becomes one of the main ways that teachers should use to consolidate knowledge in students.

From the conceptual point of view, independent work has been widely studied, it is appropriate to point out the considerations offered by:

López (1989), who specifies that "independent work is that activity assigned by the teacher to be carried out by the students in or out of the class, in a determined time without the direct and constant help of others" (p. 23)

Álvarez (1992) confirms that independent work is "... the mode of organization of the teaching process aimed at the formation of independence, as characteristics of the student's personality" (p. 54)

On the other hand, Addine (2007) states that they are "(...) teaching tasks organized and directed by the teacher taking into account the objectives set" (p. 272)

At the same time, Martínez and Cejas (2007) outline that: "Independent work is a system of activities directed by the teacher where the student is placed as a subject capable of transforming the work method and developing new procedures" (p. 111)

When carrying out a critical evaluation of these theoretical positions, it is recognized the coincidence of these researchers in giving the independent work a developing, autonomous and didactic character, where the teacher does not participate directly in the solution of it and in which the students acquire the capacity to act by themselves, where the abilities, the knowledge, the attitudes and the qualities to learn and act with autonomy are developed.

This means that independent work is an essential condition for cognitive independence, the external part that must be treated methodologically with many demands so that it moves the individual's inner world.

For its materialization, the teacher must keep in mind, according to Chirino (2005) that independent work is also focused as a method directed to:

Conscious assimilation of the teaching material.

- The improvement of knowledge and its development.
- The consolidation of knowledge.
- The formation of practical skills.
- The formation in the independent search of new knowledge" (p.19)

This shows us that the planning of independent work is not only materialized in the classroom, but also contributes to perfect its application in practice, constituting an appropriate way for the development of thought and autonomous work, as well as other skills and abilities.

Some teachers only see this path as a reproductive fact and not with a problematic approach, in search of creating knowledge and developing the creative and investigative capacities of the student.

Therefore, at the time of making an accurate planning of the independent work, it is necessary to keep in mind: its link theory - practice: the practice as a form of human activity constitutes the source of knowledge, which, when systematized becomes theory, while the theory allows the foundation of the practice and is applied in the own practice, where the components are conjugated: academic, labor and investigative.

Its problematizing character with a scientific research approach: the tasks must pose contradictions between the known and the unknown by the students, between the achieved and the new demands, between the explicit and the implicit.

This transition from the known to the unknown, which includes the system of knowledge, habits and skills, the rules of relationship with the world and the experience of creative activity from reproduction to creation, allows us to reach a higher stage of development.

The professional approach, which contributes to the formation of the future professional who scientifically responds to the demands of the contemporary world and to the preparation of the man assigned to him.

When analyzing the dynamics of independent work, Roman (2011), considers that for its projection, it is important the logical, staggered and ascending succession of the moments of planning, orientation, execution and evaluation, within which each developed action pays tribute to another of greater complexity and the role of students and teachers varies depending on the moment.

For the independent work to acquire its true dimension, allowing the achievement of a developing learning, it is necessary to adapt the levels of the students' independent activity from an adequate and accurate cognitive diagnosis, which allows planning each action with the immediate intervention of the teacher and the collaboration among peers, taking into account the levels of support proposed by Vigotski (1982), such as the zone of proximal development (ZDP), which refers to the space, gap or difference between the skills that the child already possesses and what he/she can learn through the guidance or support that can be provided by an adult or a more competent peer.

This shows that independent work is the way in which actions planned by the teacher, to be carried out by the students, can promote the development of knowledge, habits and skills, attitudes, qualities and values; and in this way prepare them to act with autonomy. Students, under the pedagogical direction of the teacher, can come to understand how to apply what they have learned in social practice.

Some teachers believe it is prudent to work with students on learning styles that will lead them to a more productive independent study, oriented towards the search for answers to key questions in self-preparation such as: the learning guide, which the teacher must take into account when preparing it:

Knowledge of the real possibilities of the students, which is achieved with a differentiation of the material.

Dosage and logical graduation of the content, not to climb the steps abruptly and to gain knowledge step by step.

To have a certain contextualization, since the students come from diverse sources of income where the previous preparation does not satisfy their needs aggravated by long years of disengagement from study and the consequent loss of certain habits and skills necessary to undertake a model centered on the student, where this is the center of the learning activity.

Elaboration of tasks for the self-preparation where it manages to imbricate all the aspects referring to the content.

Three features are also recommended for the task system in the encounter classes for planning purposes:

The first one states that a system of tasks must be sufficient, since it must be transited with an adequate amount of exercises and activities of one level, before passing to the other one that continues it, for example, to exercise sufficiently the reproductive level before passing to the productive or applicative one.

A second characteristic states that they should be varied, which is reached when no exercises are proposed, always in the same way, that is, the approaches are changed, another important orientation is to move the positions of the objects, phenomena and processes, approaching the contents from all their edges.

Finally, the tasks must be differentiated so that they are within the reach of the three types of students that exist, those who have difficulties, the averages and the advantages. Taking into account Bombalé (2012), as "differentiated task is understood that in which there are activities and exercises for the three types of students, thinking about it is a guarantee for success" (p. 8)

The guide for independent work is precise in it:

Subject, Title, Theme, Objective (action), Operations, Bibliography.

Tasks for independent work, forms of control and evaluation, time.

It also suggests, recommends, and advises how to study.

Teaching tasks for independent work in the subject Agricultural Mechanization of the degree course in Agriculture and Livestock

Taking into account the theoretical-methodological aspects addressed above, the program of the subject Agricultural Mechanization, corresponding to the discipline Agricultural Administration and Technical Services, located in the 3rd year of the degree in Agriculture with 28 hours and is taught in the second semester.

It is related to the disciplines of Biological Sciences (Agro-ecology, Soils and Agro-chemistry), Agricultural Production (Integrated Farm Management, Agro-ecological Plant Management, Forestry and Forest Management), in addition to the disciplines of Administration, Topography and Irrigation and Drainage.

The general objectives of the course program are aimed at

To explain the technological, economic and research processes in agricultural production, taking into account their impact on productive efficiency and their importance as services integrated to these

productions, which contribute to the solution of technical problems; to the integral formation of the students' personalities; to the promotion and strengthening of sustainable and sustainable criteria; to a better conduction of the pedagogical process of the ETP, showing security, exigency, flexibility, creativity and independence through the application of scientific research methods and information technologies and the strengthening of values and qualities of the personality, based on the Marxist-Leninist ideology, the Martian ideology and the thought of Fidel Castro Ruz.

The program of this course is structured in 2 topics:

Topic I: Tractors and Engines, with a total of 12 hours.

Theme II: Machines and aggregates used in agricultural and forestry production for soil preparation, sowing and/or planting; cultivation tasks: fertilization. Plant protection; harvesting, handling and processing. Function, classification, structure, regulations, technological process and maintenance. Animal traction and use of alternative energy sources. With a total of 16 hours.

The theme chosen to exemplify the treatment of independent work is theme II: Machines and aggregates used in agricultural and forestry production for soil preparation.

Tema que aporta a la formación del docente, los conocimientos técnicos y metodológicos para la dirección del proceso de enseñanza aprendizaje.

1. Furthermore, it constitutes an important cognitive node with a view to achieving an environmentalist culture in line with scientific-technical advances in students, by properly using the different implements used in agricultural and forestry production for soil preparation.
2. Objective: To explain the function of the machines and aggregates used in the primary tasks of soil preparation from its structure, in order to achieve an efficient operation, complying with the rules of protection and hygiene of work and environment.
3. Self-learning activities.
4. Perform a bibliographic search on the subject matter and respond:
5. How are the plows classified according to the work organs, coupling with the tractor? (check start of class)
6. Analyze the different agricultural implements used in the primary tasks of soil preparation and prepare a table with each one of them and their functions, which will allow you to explain them in the next class. To do this, consult the bibliography in the digital site of the career, of the subject

Agricultural Mechanization, ECURED, thematic Internet, as well as other sources that deal with the subject.

7- Make an abstract and send it by e-mail as a Word document, Arial 12, line spacing 1.5.

- Consult the oriented bibliography and carry out a comparative analysis between the plow and the disk plow in terms of how to carry out the work.
- Write a one-page report reflecting the environmental advantages of using ploughs.

Make a thorough reading in the bibliographies oriented and answer the following situation:

- In a production area of the Reynaldo Castro Mixed Center, the soil was broken up to plant the sugar cane crop, where large clods were left behind and the weeds began to come out.
- What would you use as a future professional?
- What reasons allowed you to select it?
- What are its component parts?
- Study the functions of each of them and make a summary in your notebook.
- Prepare a chart showing the main technical maintenance performed on the machines and aggregates for soil preparation.
- Make an assessment of why a correct tilling of the soil favors its vitality and the efficiency of its preparation.

Visit the nearest productive entity and make an inquiry about the technology they use for soil preparation and how it helps to preserve the environment.

Find out about the advantages of using the Multiplow in soil preparation work.

Prepare a summary sheet where you reflect the significance of these means for the conservation of the soil and the environment. Refer also to the elements that justify the use of the Multiplow.

You should use no more than two sheets of paper.

For the control of independent work will be taken into account:

It will be evaluated through a debate, activities 1 to 4, between the teams that the teacher will bring to the classroom on the day of the meeting. One team will be the opponent, the others will expose. These teams will be formed taking into account the diagnosis, so that they are balanced.

Activity 5 and 6 will be collected by the teacher, taking into account the introduction, development and conclusions, in no more than 2 pages, per team.

For the development of the work, the material in digital support will be taken into account: Sabatini 33 Photo 7.pdf "New technology of tillage with horizontal cut".

A written verification of the content studied in the two meetings will be applied.

As an extra task, the preparation of a system of teaching media that would be used to treat this content in the teaching could be oriented for future classes. One per team.

Conclusions

The theoretical and methodological foundations that characterize the dynamics of independent work in Higher Education, allowed confirming that in its materialization the tasks must be adequately structured with a systemic conception, taking into account the students' diagnosis, the demands of the programs of the disciplines and the corresponding curricular designs to favor the transit from the reproductive levels to the productive levels of knowledge. The diagnostic study corroborated the need to perfect the conception of the independent work of the students of the Agricultural career. The independent work is designed from teaching tasks that propitiate a favorable environment, of search, exchange, starting from the diagnosis of the state in which the students' learning is found.

Bibliographic references

- Álvarez, C. (1996). *Hacia una escuela de excelencia*. La Habana: Editorial Academia.
- Addine, F. (2007). *Didáctica: Teoría y Práctica*. (pp. 225- 275). La Habana: Pueblo y Educación.
- Batista, T. (2003). Un Modelo de Trabajo Metodológico en el Año Académico y su Contribución a la Formación Continua del Profesorado. *Pedagogía Universitaria*, 5(8), La Habana.
- Bombalé, B. (2012). *La planificación del trabajo independiente en la clase encuentro*. Disponible en: <http://www.efdeportes.com/> .
- Colectivo de Autores. (2003). *Preparación pedagógica integral para profesores universitarios*. La Habana: Félix Varela.
- Chirino, M. V. (2005). El trabajo independiente desde una concepción desarrolladora del proceso de enseñanza-aprendizaje. En García G., et al. *El trabajo independiente. Sus formas de realización* (pp.16- 27). La Habana: Pueblo y Educación.
- Fernández, J. (1983, 3 de abril). Discurso pronunciado en la clausura de la Reunión Científica de Profesores del Instituto Superior Pedagógico "Frank País" de Santiago de Cuba. *Granma*, p. 2.

- Ministerio de Educación Superior (2018). *Reglamento de Trabajo Docente y Metodológico*: Resolución No. 2. La Habana.
- López, J. (1989). La orientación como parte de la actividad cognoscitiva de los escolares. *En temas de Psicología Pedagógica para Maestros II*. La Habana: Pueblo y Educación.
- Rojas, C. (1978). El trabajo independiente de los alumnos. Su esencia y clasificación. *Revista Varona No 1*. La Habana.
- Rizo, H. (2004). La evaluación del aprendizaje: una propuesta de evaluación basada en productos académicos. *En Revista Electrónica Iberoamericana sobre Calidad, Eficacia y Cambio en Educación*, 2(2), La Habana.
- Román, E. (2011). *Modelo didáctico para perfeccionar el trabajo independiente en la modalidad de estudio semi presencial*. (Tesis de Doctorado). Universidad Central “Marta Abreu” de Las Villas. Santa Clara.
- Martínez, M. y Cejas, E. (2007). El trabajo independiente: fases y formas de realización. *En IPLAC. Maestría en Ciencias de la Educación. Mención ETP. Módulo III (Cassette)*. La Habana: Cined. (Código 216).
- Vigotski. L. S. (1982). Pensamiento y Lenguaje. Disponible en: <http://es.wikipedia.org/wiki/lev.vygotski#searchinput#>