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The integrative evaluation, its contribution to the professional formation in the Degree in Agricultural Education

La evaluación integradora, su contribución a la formación profesional en la Licenciatura en Educación Agropecuaria

A avaliação integrativa, a sua contribuição para a formação profissional no Bacharelato em Educação Agrícola

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ABSTRACT
The Study Plan E in the Bachelor's Degree in Agricultural Education has as its guiding discipline Labor and Investigative Training, due to its condition it must achieve, more efficiently, the integration of the academic, the labor, the investigative and the extensionist. It coherently modulates the contents of the exercise of the profession present in Labor Practice, the Methodology of Educational Research and Agricultural Didactics. An exploratory study of the discipline showed that weaknesses related to the design, implementation and control of the evaluation are observed with an integrative nature, these ones do not always incite students to search, investigate and problematize the content they learn to solve professional problems. It is for this reason that this article aims to propose methodological guidelines for the planning, execution and control of integrative evaluation in the main integrative discipline of the degree in Agricultural Education. Methods of the theoretical level were used such as: the historical-logical, analysis and synthesis, induction deduction and the system approach. At the empirical level, the review of several documents of the methodological work and the observation of performance were used. This result was introduced three years ago in Pinar del Río, with the implementation of Study Plan E, showing satisfactory partial results in the conception of evaluations that pay tribute to the student's independent work through the development of search and research capacity, access to knowledge through the use of computer and communication technologies, the application of learning to solve professional problems with interdisciplinary basis.

Keywords: main integrative discipline; agricultural education; integrative evaluation; professional training.

RESUMEN
El Plan de estudio E en la carrera Licenciatura en Educación Agropecuaria

tiene como disciplina rectora la Formación Laboral e Investigativa, que por su condición debe lograr, de forma más eficiente, la integración de lo académico, lo laboral, lo investigativo y lo extensionista. Esta disciplina modula coherentemente los contenidos del ejercicio de la profesión presentes en la Práctica Laboral, la Metodología de la Investigación Educativa y la Didáctica Agropecuaria. Un estudio exploratorio a la disciplina arrojó que se observan debilidades relacionadas con el diseño, implementación y control de la evaluación con carácter integrador; estas no siempre incitan a los estudiantes a la búsqueda, a la indagación y a la problematización del contenido que aprenden para solucionar problemas profesionales. Es por ello que este artículo tiene como objetivo proponer orientaciones metodológicas para la planificación, ejecución y control de la evaluación integradora en la disciplina principal integradora de la carrera Licenciatura en Educación Agropecuaria. Se emplearon métodos del nivel teórico como: histórico-lógico, análisis y síntesis, inducción-deducción y el enfoque de sistema. Del nivel empírico se empleó la revisión de varios documentos del trabajo metodológico y la observación del desempeño. Este resultado se introduce hace tres años en Pinar del Río, con la implementación del Plan de Estudios E, mostrando resultados parciales satisfactorios en la concepción de evaluaciones que tributan al trabajo independiente del estudiante, mediante el desarrollo de la capacidad de búsqueda e investigación, el acceso al conocimiento a través del empleo de las tecnologías de la informática y la comunicación, y la aplicación del aprendizaje para solucionar problemas profesionales con carácter interdisciplinar.

Palabras clave: disciplina principal integradora; educación agropecuaria; evaluación integradora; formación profesional.

RESUMO

O Currículo E no Grau de Educação Agrícola tem como disciplina orientadora a Formação Laboral e Investigativa, que devido à sua condição deve conseguir, de forma mais eficiente, a integração dos aspectos académicos, laborais, investigativos e extensionistas. Esta disciplina modula coerentemente o conteúdo do exercício da profissão presente na Prática Laboral, na Metodologia da Investigação Educativa e na Didáctica Agrícola. Um estudo exploratório da disciplina mostrou que existem pontos fracos relacionados com a concepção, implementação e controlo da avaliação com carácter integrador; estes nem sempre encorajam os estudantes a pesquisar, investigar e problematizar o conteúdo que aprendem, a fim de resolver problemas profissionais. É por isso que este artigo visa propor orientações metodológicas para o planeamento, implementação e controlo da avaliação integrativa na principal disciplina integrativa do diploma de Educação Agrícola. Os métodos do nível teórico foram utilizados como: histórico-lógico, análise e síntese, indução-dedução e abordagem do sistema. A nível empírico, vários documentos metodológicos foram revistos e o desempenho foi observado. Este resultado foi introduzido há três anos em Pinar del Río, com a implementação do Curriculum E, mostrando resultados parcialmente satisfatórios na concepção de avaliações que contribuem para o trabalho independente do estudante, através do desenvolvimento da capacidade de pesquisa e pesquisa, o acesso ao conhecimento através da utilização de tecnologias de informação e comunicação, e a aplicação da aprendizagem para resolver problemas profissionais de carácter interdisciplinar.

Palavras-chave: disciplina principal integrativa; educação agrícola; avaliação integrativa; formação profissional.

INTRODUCTION

The process of vocational training, and educational event that is articulated with the labor market and technological advances that develops in universities must be up to the challenges of the time, for the integral development of students; likewise, it must guarantee the elevation of the cultural, scientific and technical level of man as a social being.

The university curriculum, its management, must be conceived as a conscious and scientifically argued that, since the pedagogical sciences, can lead to a process for creating greater impact, in the interests of the mission accomplishment of the institutions of Higher education. The improvement of the training process in Cuban universities is based on scientific didactics, for the management of the curriculum from its planning in the pedagogical groups.

Mass, Milián, Simón, López and Roteta (2014) assure that this curricular system of Cuban Higher Education is based on a developer conception, which means that educational influences tend to prioritize the influences associated with autonomy, self-training processes and creativity, as qualities of the personality of the future graduate that serve as the basis for facing social and professional situations.

The university education fully prepares students and it is managed by two fundamental ideas: The union between education and instruction, which expresses the link between aspects of personality formation, pedagogical ethics and modes of action in the professional performance of students from instruction and the contents of the profession and development of the curriculum (it is to say, focus teaching not only in the cognitive aspects but in its dialectic integration with the modes of action of their professional performance) and the linking of the study with work, which refers to the ratio of the training process and the practical work from the disciplines and subjects of the curriculum.

With the implementation of Study Plan E in the Bachelor of Agricultural Education career from the guidelines of the Ministry of Higher Education (2016), the main integrating discipline Labor and Investigative Training arises, which coherently modulates the contents of the exercise of the profession present in Labor Practice, the Methodology of Educational Research and Agricultural Didactics.

The discipline, due to its characteristics, requires meticulous methodological work, in congruence with its guiding objectives in the training process, coinciding with the criteria of Urgellés, Escalona and Diez (2017) and Rojas, Moreno and Valle (2019).

In pedagogical practice, it is observed that this integrative disciplinary conception implies challenge s for the methodological groups of the career. When checking guidance documents there are weakness, since no content and features that should have the guidance of professional practice is objectively accurate how to integrate and indicators for the design of integrative assessments, in correspondence with modes performance.

The evaluation, as a component of the teaching-learning process, allows knowing the state of appropriation of the

contents and the control of the evaluation of the results. It also permits toappreciate the level of compliance with the objectives and strengthening personality traits, so it has functions: informative, educational, diagnostic, development and control. As activity, it guides and regulates possible education for achieving career goals and the development modes of action corresponding to the object of the profession.

As a process and a result, the evaluation of learning in vocational training constitutes a complex subject treated by different researchers. Some have delved into theoretical and methodological aspects: López, González and Cardoso (2015); Acosta, García and Bacardí (2016); Almaguer, Silva and Medina (2018); Alfonso and Valladares (2019), who agree on the need to assess, coupled with learning, the involvement in self-management and self-regulation processes. They also warn of the need to evaluate other aspects of the subject's manifestation such as: the appropriation of the contents, the development of their personality where the affective, the educational and the communication mediate; however, it is not explicit how to materialize it in the context that concerns us.

The training of professionals in the course by encounters requires the protagonism of the student, allowing them to get involved in the construction of knowledge through independent work, research and self-management of learning (Fernández, Jerez and Rodríguez, 2019). That is why planning assessment and with it the indicators to be measured must be congruent to obtain better information about this process, taking into account the objectives and content of the course, the discipline or the instance that is concerned.

From the philosophical point of view, the evaluation is conceived from a dialectical-humanist perspective, paying tribute to competent training in interaction with the demands of the professional model and the productive processes of agricultural companies with a high preparation in the technical specialty and experience at work, in their relationship with technology and the dynamics of labor organization and in the social psychological and pedagogical field, which allows the formation of the students for management of the educational process in Technical and Professional Education.

From the sociology in education, from the planning of the integrative evaluation the dialectical unity between the subjectivities (assimilation) and objectification (materialization) of the content is reflected.

Since the psychological foundations the contribution of evaluation to the integral development of personality is conceived. In correspondence with the systemic nature and the dialectical relationship between activity and communication, the evaluation process is admitted as a whole and the forms are aimed at the construction of knowledge and strategies for learning in the group under the teacher's guidance, in the projection of the evaluation, from the comprehensive diagnosis of the student with a marked integrative, developer, personalized and collective approac, in correspondence with the professional model.

The use of integrative evaluation favors interpersonal relationships, the production of ideas, assuming positions, teamwork, dynamics for reflection and debate as part of the students' creativity. In addition, it activates the material or ideal motivational component and meets the need of the subject. The same goes through different

processes performed by man with certain goals in the conscious and regulated execution, coinciding with Alfonso & Valladares (2019), who poses that stimulation, in addition to the internal strategies aimed at promoting effect by what and for what to learn, give essential meaning to the self-evaluation that the student makes of what is taught and learned.

By confronting students with integrative assessments that require logical reasoning, interpretation and argumentation of diverse content, teachers will contribute to the achievement of the general training objectives in each academic year and, through the strengthening of interdisciplinary and transdisciplinary relationships, will contribute to the preparation for the exercise of culmination of studies with a more integrated theoretical construction of the educational reality, based on a competent training.

Didactics of Higher Education is assumed, considering the relationship between categories and the protagonists of the process of teaching and learning supported by university-center polytechnic-enterprise relationship, so it is conceived integrating tasks as a form of assessment that respond to the scientific problems detected in the different contexts where the process takes place and to the cognitive and individual needs of the students.

The methods, which should focus on the problem teaching (Perez, Hernandez and Perez, 2017) are important, with the aid of natural means preferably in specialized areas of schools where they perform the labor component, so that identify with the mode of professional performance, always aimed at the multilateral formation of the personality (Lazo, Calderón & Ledesma, 2018).

To achieve vocational training modes of competent performance requires a projection of evaluation from class - meeting, as the fundamental form of the process in the course of meeting, taking into account the interdisciplinary relationships and transdisciplinary curriculum that integrates contents of the disciplines. This is specified by promoting cognitive independence, with an active and voluntary participation of those involved in the process, to reach higher levels in the appropriation of the content, focused, above all, on the ability to learn by doing, demanding the commitment of the student.

This approach promotes individual learning experience, presenting to the individual professional productive situations, enabling thesearch of solutions, with a critical and active thinking for communication and cooperative work from the different educational contexts.

The fundaments from the agricultural sciences are given by the high scientific - technological level in the conception of integrative evaluations, with an emphasis on its procedural component. The objectives and abilities that are expressed in the discipline programs respond to these social demands; However, in its instrumentation, specifically in the Labor and Investigative Training discipline weaknesses are observed in the design, implementation and control of the evaluation, which do not always incite students to search, inquiry and problematization of the content they learn. The knowledge system lacks an integrative character using techniques of information, communications and the use of scientific research methods.

Taking into account all the above, it is established as an objective: to propose methodological guidelines for the planning, execution and control of the

integrative evaluation in the main integrating discipline of the Bachelor of Agricultural Education career.

MATERIALS AND METHODS

The research was developed in the Bachelor's Degree in Agricultural Education. We worked with a population made up of the 12 teachers that make up the pedagogical group. The dialectical-materialist method as a general method predominated, which made it possible to operate with its laws, categories and principles.

The historical-logical method allowed penetrating the object of study and knowing the conception of evaluation as a component of the teaching-learning process from an integrative approach.

The analysis and synthesis facilitated or orientation in the search of theoretical methodological grounds, in determining the results obtained from the diagnosis, and in the proposal of methodological guidelines.

Induction and deduction was used during the consultation process and critical evaluation of the literature on the determination of interdisciplinary nodes and processing information and interpretation of results, allowing drawing conclusions.

The system approach provided the general orientation for the study of the evaluation category, the way it is conceived and developed in the process, establishing links and relationships.

From the empirical level a document review was done: the curriculum of career plans methodological work and acts of the different methodological groups to discuss the preparation of the subjects planning, execution and control of integrative assessments in the process and corroborate the interdisciplinary contribution to Labor and Investigative Training. Evaluative instruments in different academic years and their learning results were reviewed. Evaluative activities were observed for the analysis of the performance of the students during them.

For the information process techniques of the descriptive statistics as percentage analysis were used.

RESULTS

In reviewing the documents of the methodological work, it was found that performed guiding actionsfor the planning, execution and control of the integrative evaluation, although the activitieswith a demonstrative character (20 %), including open classes were insufficient.

Integrative evaluations are conceived on a 4 0 % for coursework and 20 % for final exams; however, for the systematic and partial assessments there are incipient actions, representing 5 %.

In processing the information gathered on the observation of the performance of students in the development of systematic evaluations, theory and practice and course work partial evaluations, essentially, inadequacies are presented to integrate content in solving professional problems and not always the potential of the labor and research component for solving tasks take advantage, in 45 % of them.

The analysis carried out revealed the need to devise methodological guidelines for the improvement of the conception of the integrative evaluation of the

class - meeting to achieve, from the combination of independent and investigative work, access to knowledge with the use of the technologies of the computer science, communication and ways to check learning in the solution of professional problems with an interdisciplinary nature and the solution of professional problems.

Methodological guidelines for the design of the integrative evaluation

The conception of the integrative evaluation generates knowledge and promotes creativity; stimulates self-learning, argumentation and decision-making; It favors the development of interpersonal and teamwork skills from the dialectical view of the relationships between learning and development.

The appropriation of the contents of the specialty and its didactics and with it the investigative skills to solve problems of agricultural education must be conceived from the Labor and Investigative Training, as the main integrating discipline. However, the rest of the disciplines must conceive tasks that contribute, from the professionalization of the content, to the professional training from the design of systematic, partial and final evaluations with an integrative nature. This conception needs of the independent work of the students and the observation and experimentation of knowledge to solve problems of practice.

Taking into account the previous foundations, integrative evaluation is defined as: progressive process of observation and analysis of the systematic transformations of performance in the competent professional training process, which enables the student to get involved in the construction of knowledge through independent work, research, communication and self-management of learning with an integrative, interdisciplinary and transdisciplinary nature.

The conception of the integrative evaluation goes through three stages with its essential actions:

1. Planning

Selection of the professional problem

Taking into account the objectives of the academic year and the interdisciplinary nature, the professional problems are selected. In the methodological collectives it takes out the corresponding analyzes to integrate the content, promoting the active and participatory work focused on inquiry and reflection to reach the solution of scientific-pedagogical bases.

Develop the objective of the integrative evaluation

It is essential to objectively specify the purpose of the evaluation, which in this case has to do with enabling an instance of integration and communication of learning, built on the solution of one or more professional problems. The activity revolves around the linking of theory with practice in the areas of production and services that demand the content competition.

Selection of the contents to be verified

The integrative assessment should focus on the content and the direction of the affective and cognitive unit, investigating the ways that allow a comprehensive assessment of learning and its meaning for students, in a holistic and contextualized way. It must include theoretical and practical aspects, as well as academic, labor, research and extension content. It also regulates or guides the student towards deepening

independent study, through the development of their motivation and the formation of learning strategies to improve their performance in the training and work process.

Determination of interdisciplinary nodes and their relationships

The integration of the contents requires an exhaustive methodological work in the teaching group of the subjects, the disciplines, the academic year and the career, which must be pronounced by the interdisciplinary unit in the training process.

The combination of content, from various disciplines that contribute to solving basic professional problems, where it is necessary to define what each subject or discipline contributes to its solution. It can be a final exam or course work, oral and / or written that is carried out to demonstrate the degree of mastery of the objectives of the year and the career, depending on the knowledge of the study subjects. Almaguer Silva & Medina (2018) criteria are assumed related withthe integrator character given by the assimilation of various knowledge of the curriculum, which show the access to culture for the development of professional skills.

It is necessary to model tasks that generate in students the search for solutions with a high degree of creativity, dynamism and integration, for small-scale experimentation in productive areas, the selection of alternatives for the improvement of productivity under physical conditions. adverse productive activities, scarce resources and low-cost technological equipment in the exploitation of specialized basic areas under conditions of sustainability, the foundation on food production in the agricultural module, the orientation and direction of the processes based on the new non state productive forms; in general, the assessment of current social demands and perspectives related to scientific-technical advances and technological changes that arise in educational contexts , in line with social demands.

Analysis of the potentialities of the labor, extension and research context

It is necessary to update the integration agreements with polytechnic centers, entities of production and agricultural services, research centers, as well as other local educational agencies. It should be identified reference farms and leader peasants to systematize productive community experiences as a way of learning advised by their tutors.

Integrative assessment involves a communication process insofar as it produces knowledge and the student socializes it in educational contexts with a system approach. It is significant the relationship between the development of the mode of action before the professional activity and the personalized possibilities to assume a leading position in the performance evaluation.

The student learns, through actions, about, external and internal reality, so these actions allow him to ask questions and objectives that lead him to new explorations in the solution of the professional problem raised. It is appropriate to demonstrate mastery of fundamental and nuclear learning, apply them and transfer them to new learning situations.

Elaboration of the evaluation instrument

Among the forms that account for the learning achieved by the students are: oral presentations, colloquia, debates,

report writing, presentation of technical instructions, laboratory practices, writing scientific articles, portfolios, among others.

The selection of the appropriate and pertinent evaluation instrument, in correspondence with the diagnosis and the objectives, will make it possible to show the mastery of the fundamental learning and the levels of integration of the disciplines in the evaluation.

It is necessary to assess, in addition, the real possibilities of application, taking into account the number of students, time or duration of its resolution and the material conditions of polytechnics and labor entities for execution.

In the elaboration of the norm and qualification key of the integrative evaluation, a careful procedure is required when establishing the qualification parameters, establishing a score for each aspect correctly solved, fulfillment of the objectives, coherence, relevance, clarity of the concepts, logical order, capacity for synthesis, scientific news, bibliographic analysis, etc.

Orientation of the evaluation

Independent work is the fundamental method for the preparation of the student, therefore, its organization must be in correspondence with its didactic functions; It must be conceived taking into account the assurance of the student's previous academic conditions for the approach of the contents and the development of professional skills, achieving cognitive independence inside and outside the class -encounter and that is manifested through the self- preparation of the student, from the necessary guidance of the teacher. The combination of this with the investigative method generates the search for information in certain sources; it leads to the performance of activities by the students, under the direction of the teacher, which must be achieved gradually.

Achieving active participation in the orientation phase of the evaluation presumes that the teacher requires the student to analyze the material and objective conditions, the data and information funds offered, as well as the procedures to be used in their solution. This contributes to comprehensive professional training from the development and practice of attitudes, management skills and application of knowledge to educational practice, which will be controlled in the corresponding evaluation instrument.

Pedagogical ethics demands from teachers a meticulous planning of the evaluation that implies guiding the students the form, the objectives, the bibliography, the information funds to take into account, as well as the possibility of clarifying doubts during the preparatory phase; their duration and the period established to report the results of their performance must be notified, with sufficient time and clarity.

The student must demonstrate mastery of the technological processes and productive challenges of companies or labor entities taking into account:

- The diversification of alternative agricultural production systems in tune with the environment (ecological, biological, organic and biodynamic).
- The promotion of sustainable agriculture, harmonizing agroecological practices that guarantee a rational use of land exploitation, for all generations.
- Raise the individual and collective consciousness of the human being, in relation to their economic prosperity, trying to stabilize and increase productivity.

2. Execution

The execution of the integrative assessment has to express the relationship of practice with theory and of this with an enriched and contextualized practice (learning by doing).

As part of the performance of the student in the development of integrative assessment, theoretical elements with reality applications and working environment with the support of actors and educational agencies involved in the process must be confronted.

In oral and / or written communication, the appropriation of the professional technical content and its transfer to the pedagogical process of Technical and Professional Education must be demonstrated, evidencing the production of knowledge from interactivity (teaching to learn).

3. Control

Inclusive assessment should be flexible to ensure the stimulation and recognition of major achievements, the use of methods and procedures that enable constant regulation and, involving self - evaluation and hetero evaluation of all the actors involved.

After the evaluation process, it is necessary to evaluate the applied instruments and the treatment of the results to assess their effectiveness in the process, allowing:

- Identify and describe recurring difficulties and/or achievements.
- Analyze the quality of the forms used for the determination of the possible causes that favored or hindered the learning integrators.
- Take decisions to assume shared responsibilities to optimize learning and the timely redesign to achieve superior results.

Feedback from the generating process generates to resize aspects less successful and maintaining the positive, applying techniques such as brainstorming and others values to integrate the contents, their interdisciplinary, interconnection of such knowledge in integrative evaluations that must be mobilized to the pedagogical process of Technical and Professional Education, among others.

The main results of the implementation of the methodological guidelines, according to the observation of performance and the review of documents correspond to the following:

- It is guaranteed that 100 % of the teachers in training, during their performance in the Labor and Investigative Practice, take advantage of the different educational contexts for an integrative learning that allows them to solve professional problems in a creative and renewed way.
- The results of the integrative evaluations, in response to the follow-up and the attention received from the Investigative Labor Practice, showed that 92 % obtained scores between 4 and 5 points.
- 12 systematic evaluations were designed six partial and four finals, of which, in the course work by teams as a form of final evaluation, the best quality results were obtained.
- 80 % of the investigations resulting from independent work for the solution of professional problems were socialized in: the Science and Technology Base event, in the scientific societies of the polytechnic centers and in workshops of the Association of

Agricultural and Forestry Technicians.

DISCUSSION

The group of the Bachelor of Agricultural Education career, based on its experience, has considered the proposed guidelines to be relevant to achieve a training process that corresponds more to the professional objective of the graduates, focused on teaching how to produce food in a sustainable way, which satisfies the social demands of Cuban agriculture as a social order. These criteria are consistent with those obtained by Lopez, Castro and Baute (2017), based on the relevance of planning, organizing, direction and control, with a good orientation and arranged in stages for solving the problem, the objectives, forming skills and develop skills in relation to the professional model.

The results obtained by Hernández, Hernández and Ponce (2017) were also consulted regarding the quality of academic results, with a satisfactory impact on professional training, being able to direct the pedagogical process from the educational institutions of Technical and Professional Education competent for teach how to solve problems related to agricultural and forestry production, with an adequate use of natural resources applying the scientific and technology methods and reaching a high performance in the farming production systems present in different forms and under country organizational constituting the base link in general.

The treatment of interdisciplinary is significant in the methodological orientations for the integration of knowledge, in the development of the teaching-learning process. In the case of higher education it goes beyond because of the need for training of a competent professional that requires the current time. The interdisciplinary character of the processes and phenomena is a necessary part of the objective reality, reflecting the unity of the world and the concatenation of all phenomena.

Regarding the theoretical aspects addressed the current demands of Higher Education and the foundations of the curricular design of each career are assumed to integrate evaluations. It is then, imminent, to conceive class - meeting and study guide which prepares college student in managing their knowledge, with greater independence, with access and availability of the information he needs. From the Didactic of Higher Education it should establish the relationship of interdependence between the levels of assimilation of content; and components: organizational forms of the process of teaching and learning, methods of teaching and learning and assessment of learning.

As a conclusion, the proposed methodological guidelines are based on a conception of comprehensive and participatory evaluation, which considers general and particular elements measurable in the student's performance, through the direction of the pedagogical process of Technical and Professional Education, the application of technologies of agricultural production processes in a framework of agro ecological sustainability, taking into account the ethical principles and values of the profession.

It is essential a congruence of several contents of different subjects or disciplines that harmonize with each other, that attends to the objective of the academic year and contribute to that the student be the protagonist of their learning by using the techniques of information, communications and the use of scientific research methods in professional problem solving.

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Apendix

Apendix 1. Guidelines for the review of the methodological documents

Objective: To ascertain the treatment of integrative assessment methodology in different groups.

General data:

Methodological group: _____

Years of experience of the teacher who directs the activity: _____

Criteria to take into account:

- Diversity of methodological activities, mainly those of a demonstrative nature.
- Correspondence between the content of the integrative assessment concept and the potential of the teaching community.
- Methodological indications for the planning, execution and control of systematic, partial and final evaluations with an interdisciplinary nature.
- Satisfying integrative evaluations and generation changes and transformations internally of the professor and n training.
- E - Existence of a relationship of interdependence between the *levels of assimilation of the content* and the triad: organizational forms of the teaching-learning, methods of teaching and learning and assessment of learning.
- Level of attention to the results of the evaluations obtained by the students and the quality of how the teaching and learning process is managed.
- Analyze the quality of the forms used to determine the possible causes that favored or hindered learning.

- Make decisions that allow assuming shared responsibilities to optimize integrative learning and timely redesign to achieve superior results.

Apendix 2. Guide for the review of evaluation instruments

Objective: Ascertain the levels of integration in the integrative assessment and the results in learning.

General data:

Years of experience of the teacher directing the activity: _____

Criteria to take into account:

Indicators		
Level of the results of the integral appropriation of the technical-professional content.	- Demonstrates good command of the comprehensive appropriation of technical-professional content.	TO
	It shows an adequate mastery of the integral appropriation of the technical-professional content, but sometimes they do not always favor the learning of the students and the protagonism in the activities that are developed in process.	M
	Presents weaknesses in the domain of comprehensive appropriation of technical-professional content.	B
Skill level in the execution of professional skills	Skillfully executes professional skills and there is correspondence in procedures and actions to be carried out at a rapid pace, evidencing the ability to know how.	TO
	It executes professional skills, although sometimes the work algorithm of procedures and actions is altered by omission or lack of precision, which leads to repeating the skill several times, by virtue of making it more understandable at a moderate pace.	M
	Presents shortcomings in the execution of professional skills, regardless of whether they have knowledge from a theoretical point of view; however, it is difficult for him to perform the procedures and actions from a practical point of view at a normal pace.	B
Level at which it integrates procedures in the search for solutions to productive professional problems	Integrate technical and practical procedures in finding creative solutions to professional problems with good ability to analyze and undertakes difficult actions by successful initiatives, demonstrating mastery of the education processes of the agricultural production holistically.	TO
	Integrate technical and practical procedures in finding solutions to professional problems, but sometimes the technical and professional content	M

	with proper mastering processes of agricultural education production is not integrated, despite this, it achieves satisfactory results.	
	It presents difficulties in integrating technical and practical procedures in the search for solutions to professional problems, limiting the corresponding actions to operate with the technical-professional content, in an integral way, in the domain of educational processes of agricultural production, achieving unfavorable results.	B
Level of compliance with ethical-professional values	It is an example in the fulfillment of ethical-professional values and transmits them to its students, achieving positive transformations in the modes of action.	TO
	It is an example in the fulfillment of the ethical-professional values; However, it cannot conceive consciously work to develop them during the training process, highlighting difficulties in the behavior of the modes of action.	M
	It presents difficulties in his professional performance, since It does not always demonstrate compliance with the ethical-professional values and does not conceive tasks for the development of them during the training process, showing difficulties in the behavior of the modes of action.	B

Observations and recommendations:

Conflict of interest:

Authors declare not to have any conflict of interest.

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Authors participated in the writting process of this article and in the analysis of documents.