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Integrative tasks in the teaching-learning of Biology to students majoring in Primary Education

Tareas integradoras en la enseñanza-aprendizaje de la Biología a estudiantes de licenciatura en Educación Primaria

Teresa Paula Pedraza Álvarez[1]

E-mail: tpedraza.nbienes@gmail.com

https://orcid.org/0009-0007-4581-4322

Juan Ramón Castillo Pérez[1]

E-mail: ramon@ca.ss.rimed.edu.cu

https://orcid.org/0009-0009-9038-2690

Idalmis Pérez Brunet[1]

E-mail: idalmis@ca.ss.rimed.cu

https://orcid.org/0009-0000-0762-8958

[1] Centro Universitario Municipal de Cabaiguán. Sancti Spíritus, Cuba.

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ABSTRACT

Introduction: Higher education in the Cuban context gives relevance to the integration of contents. Environmental education favors the establishment of

interdisciplinary relationships in the training of professionals in pedagogical careers.

Objective: To evaluate the effectiveness of the integrative tasks in the teaching-learning process of Biology, with an interdisciplinary and integrative sociocultural-professional approach, in part-time students of the bachelor's degree in Primary Education.

Methods: The research is descriptive, longitudinal and predominantly qualitative. The unit of analysis was the students in the third year of the Bachelor's Degree in Primary Education. The theoretical methods were: historical-logical, induction-deduction and analysis-synthesis. The empirical methods: document review, observation and group discussion.

Result: The design of integrative didactic tasks and their evaluation with a sociocultural and professional approach favors the integration of the contents, which facilitates the treatment from teaching of professional problems of environmental, energy and health nature.

Conclusions: The integrative task is an activity structured by a system of actions and operations that leads to the formation of integrated knowledge, oriented towards the solution of theoretical and practical problems. The student requires knowledge and skills from different disciplines.

Keywords: biology teaching; higher education; integrative task; primary teacher training; professional training

RESUMEN

Introducción: La Educación Superior en el contexto cubano le concede gran relevancia a la integración de contenidos. La Educación Ambiental favorece el establecimiento de las relaciones interdisciplinarias en la formación de los profesionales en carreras pedagógicas.

Objetivo: Evaluar la efectividad de las tareas integradoras en el proceso de enseñanza-aprendizaje de la Biología, con enfoque sociocultural-profesional interdisciplinario e integrador, en los estudiantes del curso por encuentros de la carrera de Licenciatura en Educación Primaria.

Métodos: La investigación es descriptiva, longitudinal y predomina lo cualitativo. La unidad de análisis fueron los estudiantes de tercer año de

Licenciatura en Educación Primaria. Se aplicaron los métodos teóricos: histórico-lógico, inducción- deducción y análisis-síntesis y empíricos como: revisión de documentos, observación y discusión grupal.

Resultado: El diseño de tareas didácticas integradoras y su evaluación con un enfoque sociocultural-profesional, favorece la integración de los contenidos, lo que facilita el tratamiento a problemas profesionales de carácter ambiental, energético y de salud, desde la enseñanza.

Conclusiones: La tarea integradora es una actividad estructurada por un sistema de acciones y operaciones, que conlleva a la formación de saberes integrados, orientados a la solución de problemas teóricos y prácticos. El estudiante requiere conocimientos y habilidades de diferentes disciplinas.

Palabras clave: enseñanza de la biología; enseñanza superior; formación de docentes de primaria; formación profesional; tarea integradora

Introduction

The world is undergoing a great sociocultural revolution based both on the vertiginous development and on the practical and technological applications of science, which makes it possible that the teaching and learning of science is also a sociocultural activity of vital importance as knowledge is continuously updated.

The sociocultural-professional approach in science teaching determines the need to update didactics in correspondence with scientific and technological development, a topic of interest and debate in Cuban education. In his thesis, Perera (2000) provided the interdisciplinary-professional principle. Addine Fernández (2006) deals with different possible alternatives to develop the sociocultural orientation of the teaching-learning process and Torres Rivera (2008) proposes a methodology directed towards the development of teaching tasks with a sociocultural-professional approach in the subject Physics and its methodology.

Basulto-González and Jorge-Hechavarria (2016), according to their experience in Molecular Biology classes, propose the need to address the social nature of science, given the involvement of science and technology in social life. The world situation has concretized a new vision

> of what science is and represents, highlighting its social nature, i.e., its economic, political, cultural conditioning, repercussion in these areas and its relationship with technology. (p. 75).

Laportilla Estévez (2008), as cited by Guzmán Rodríguez and Pérez Bejerano (2019), states that: "(...) the conceptual nodes constitute an integrative didactic conception, a point of articulation of knowledge that is distinguished by its conceptual relevance and propitiates a nuclear structure from previous knowledge and new acquired knowledge" (p. 3).

Salazar Ochoa and Pérez Almaguer (2020) in their research, reveal "(...) insufficiencies in the preparation of teachers in the performance of the guiding function to favor the learning of Natural Sciences in primary education" (p. 89).

Later in their article, they make reference to how teachers incorporate the modes of professional performance for the good performance of guidance in their pedagogical practice and highlight its formative value for the innovative incursion in the process of training primary teachers (Salazar Ochoa and Pérez Almaguer, 2020).

Likewise, Salazar Ochoa and Pérez Almaguer (2020) consider that the didactic strategy of educational guidance in the learning of Didactics of Natural Sciences, takes shape in the development of situations from the problematization of the process; with it, in addition, the evaluation of the group activity, the student's personality and the teaching-learning process is performed through educational guidance.

La O Sánchez (2022) states that interdisciplinary learning tasks "allow the researcher to make adaptations in certain contexts to achieve the proposed objectives and to improve, from a genetic perspective, the teaching-learning process" (p. 6).

As a contribution, Peña Mantilla et al. (2022) state that by establishing the relationship between learning management and the components of the teaching-learning process for the improvement of student and teacher learning, they confirm the need for teaching with quality, in professional, pedagogical and didactic competencies.

Their research recognizes that the teaching-learning process is not generally conceived with a sociocultural-professional approach based on a specific model, so that the new conceptions of science teaching-learning are left somewhat to the use of spontaneous situations that contribute to didactic changes only through a cumulative effect.

The regulatory framework consulted in Ministerial Resolution 47/22, article 23.1 refers to the fact that: “the part-time course is developed fundamentally in the blended mode, which does not prevent that some teaching periods, or some disciplines and subjects can be developed with characteristics of the distance mode” (Ministry of Higher Education [MES], 2022, p. 6).

Related to the above, in the Biology teaching-learning process, the following insufficiencies stand out:

1. Traditional approach to the structuring of the content.
2. Descriptive treatment of the contents of this teaching discipline with a marked leading role of the teacher that leads to a memoristic and reproductive learning.
3. Insufficient solidity of the students' knowledge and the scarce possibilities that sometimes they have to use the knowledge of this science, its applications and the methods of their scientific activity to new contextualized learning situations.

These problems do not allow to respond to the sociocultural demands of these times, to the needs of the curricula, nor to the vertiginous changes of the knowledge society, which indicates the urgent need for a profound change in the conceptions about the teaching-learning of sciences.

It has been shown in several studies that sometimes students reject certain subjects, not because of their content, but because of the way in which they are taught. This has to do with the fact that many teachers do not relate the sociocultural aspects of science content and its social impact, so they lack meaning and, as a consequence, learning is difficult.

For the development of this article, it is significant that in the research carried out by different specialists and in the program of science disciplines, it is necessary to give treatment to the difficulties determined in the teaching-learning process. It is based on a diagnosis, whose results justified the need to

face the problem by treating, through the planned integrative tasks, the evaluation of students and their relationship with the mode of action of future professionals of Primary Education.

The proposal of integrating tasks is intended to materialize the ways for the sociocultural-professional and developmental approach of the educational teaching process, where the content can be learned and taught in correspondence with the current scientific and technological changes.

Therefore, the objective of this research is to evaluate the effectiveness of the integrative tasks in the teaching-learning process of Biology, with a sociocultural-professional-interdisciplinary and integrative approach, in students majoring in Primary Education in part-time courses at the Municipal University Center of Cabaiguán.

Theoretical framework or conceptual references

Scientific discoveries demand that teachers who impart the subject of Biology understand that it is not enough to master the knowledge system to be able to teach it adequately, but also to reflect on their teaching practice and on how to characterize this science in its methodological dimension.

In the solution of integrative teaching tasks, the questions, or problems, are composed of a framework of actions subordinated to objectives that the professor relates to the teacher in training. In these, the search for scientific information in the most diverse sources, the formulation of new questions and problems derived from the research that is carried out, and the elaboration and oral exposition of reports that reflect the results obtained are proposed, so that they learn with independence and train their creative and intellectual capacities.

As a result, they appropriate new ideas and attitudes, which transform their cognitive structure on a given topic on which they have previous views and knowledge. It is significant the creative capacity in correspondence with an adequate degree of motivation that is reached in the teaching activity itself.

Here the definition assumed of the sociocultural-professional approach to the teaching-learning process of science is Torres Rivera's (2008), who considers not only the knowledge and know-how, but also places special emphasis on knowing how to value and the fact that science is a cultural vehicle, which

develops in students a reflective attitude that empowers them in the understanding of their environment and allows them to consciously participate in decision making for the achievement of sustainable development, guiding on how to do the activities.

Del Sol Martínez et al. (2014) expose a classification of this type of teaching tasks, taking as a basis the type of problem that is solved and two fundamental levels of integration in the teaching-learning process are recognized: the intradisciplinary and the multidisciplinary.

Particularly in the teaching-learning process of Biology, it is assumed what was systematized by Pérez Valdés (2014, as cited by Basulto-González et al. 2017), who in his doctoral thesis stated the following:

1. Teaching-learning by transmission-reception.
2. Learning by discovery, autonomous or guided learning.
3. Expository teaching by meaningful transmission-reception.
4. Problem-based teaching with interdisciplinary or integrative nature.
5. Learning science by conceptual change.
6. Teaching through directed research.
7. Teaching by explanation and model testing.
8. Science teaching-learning as a sociocultural and investigative experience (p. 72).

Other recently published research was consulted. Among them, Basulto-González et al. (2017) state that: “the sociocultural-professional approach is not only a theoretical, academic issue, but above all a practice, a way of thinking and proceeding to know and solve any problem of the reality where the learner develops” (p. 78).

This means a change of position before the problems of knowledge and the substitution of an atomized vision for a contextualized one of biological knowledge and implies a profound transformation in teaching methods and requires a change of attitude in the relationships between the subjects involved in the educational process. It requires teachers who have sociocultural-professional thinking as a premise so that they can transmit this way of thinking and proceeding to all their students.

Peña Mantilla et al. (2021) apply didactic procedures that improve the direction of learning in Biology teachers in three moments, emphasizing the need to design actions to be carried out during the execution of learning activities, in order to offer levels of help to students for their realization and to conceive the evaluation with an integrating character of the results obtained.

Other foreign researchers, such as Grilli Silva et al. (2021), present results on the socio-educational profile of Biology teaching students and on the technological resources used for the teaching-learning processes in the specific subjects of this specialty. Both professors and students mainly used personal laptops and private Wi-Fi Internet connection.

Baque Cárdenas and Ostaiza Méndez (2022) design a didactic guide for the use of audiovisual media to improve the learning of Biology by high school students.

Ottogalli and Ángel Bermudez (2023) recognize the need for proposals that enable sociocultural approaches to Biodiversity during teacher training, as well as possible strategies for its teaching. They also recognize the potential of non-formal education spaces for teaching and learning, suggest the inclusion of proposals that contemplate this type of educational outings, and make it possible to work with different species (not limited to animals) and encourage experiences in local environments.

It is pertinent to consider experiences that incorporate environmental issues. Barrios Silva (2020) considers that the preparation of disciplines and contents is required for the attention to the learning of each subject. The development of professional skills is one of the essential suitable ways for the efficient achievement of the interdisciplinary pedagogical professional mode of action, which are structured from the theoretical and practical knowledge, and appropriated by the primary teacher in training.

Another result evaluates the teaching tasks for the treatment of environmental education from the subject Chemistry to explain life (González Portal et al., 2022).

Furci et al. (2022), in another educational context, contribute from a training experience, through a seminar, with didactic elements and favored “(...) the

dialogue between the different disciplines and approaches that make up the field of environmental education, within the framework of teacher training in Natural Sciences" (p. 69).

These authors, when referring to Didactics, specifically to the didactics of Natural Sciences, state that the proposals are interpreted by teachers as a way of integrating aspects of the social and natural sciences and their didactics. It is necessary to consider not only physical, chemical or biological issues of the environmental problems addressed, but also the social issues that arise when they are analyzed from the perspective of social conflict (Furci et al., 2022).

The sociocultural approach and the treatment of environmental problems in the transmission of knowledge in the natural sciences is materialized at the economic, environmental, humanistic, technological, ideopolitical and historical levels, through the systemic interaction of knowledge and skills, methods, ethics and work style of scientists, teachers, managers, students and other participants in the different learning spaces.

All this should lead students to acquire professional modes of action, mainly related to the mastery of the knowledge system of Biology, the design of experimental activities and the relevance of a practical-experimental thinking.

The teaching-learning of Biology with a sociocultural-professional approach should be strongly impregnated by the following features:

1. Biology occupies a transcendental place in the formation of the graduate required by today's Cuban socialist society and the scientific and technical advances that are generated daily.
2. Biology as a teaching discipline has its theoretical-conceptual system and methods to contextualize biological facts, phenomena and processes to the conditions of the students, that is, to relate biological knowledge with its impact and social applications.
3. The methods, ethics and work style of scientists, convert them into teaching methods that converge in the method of teaching-learning by directed research, which allows reproducing in the classroom context the ethics and work style that characterize the scientists' actions.

4. Development of reflective thinking in students through the use of the methodology for the solution of biological problems related to the social impact of biological knowledge. (Basulto-González et al. 2017, p. 76).

The integrative tasks become the premise and result of orientation of the teaching-learning process of Biology, from the sociocultural-professional approach, because it is an activity structured by a system of actions and operations that leads to the formation of integrated knowledge. Through it and with the precise guiding bases of the teacher, the students establish relationships with the subjects involved in the process and with the object of study, to learn integrally facts, phenomena and processes of the contextualized reality and to manifest a conscious, active, transforming and creative action.

Through the integrative task with a sociocultural-professional approach, student appropriate a scientific, integrated and contextualized conception of reality. It enables the execution of mental processes; enhances the appropriation of learning related to the dynamics of research work in its different phases; helps to form a more global vision of the impact of Biology in the teaching-learning process; contributes to develop the ability to solve problems related to the social impact of biological knowledge.

Consequently, it is necessary in the organization of the teaching-learning process of Biology, as a contemporary teaching and research activity, to be based on the approach of teaching tasks, with an integrating character through questions or problems from different given situations, involving familiarization with the situation studied, together with the analysis from multiple perspectives and locally contextualized. In this way, the integrative teaching tasks, questions or problems acquire meaning for the students and motivate them to seek the solution, as long as their potentialities and weaknesses are considered, according to their cognitive possibilities and reflecting their social and individual needs.

According to what has been analyzed, it is considered fair to highlight a group of aspects that must be taken into account in the design of the integrative tasks with a sociocultural-professional approach in the teaching-learning process of

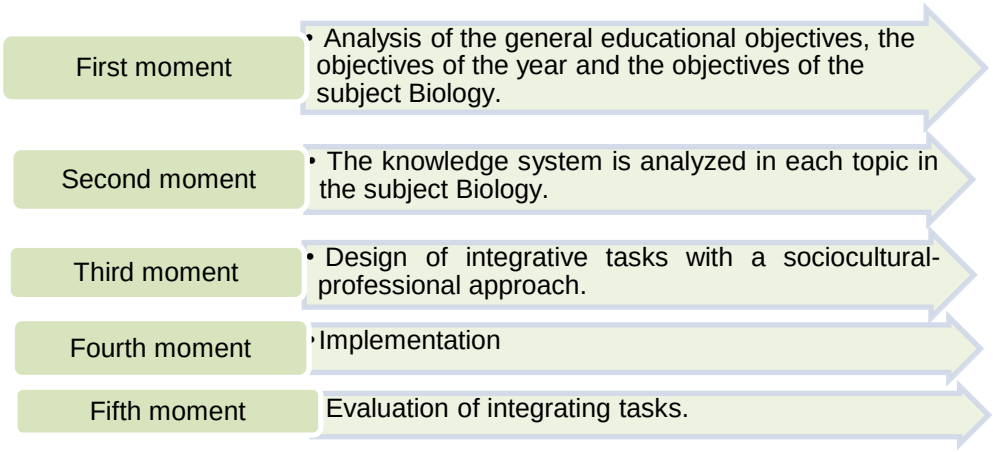
Biology, these are: the general formative objectives, the skills, the thematic plan, the evaluation and the bibliography. It is necessary to determine the potentialities of biological knowledge for its contextualization and the sequentiality of the tasks. At this moment, the order in which the integrative tasks are presented is determined. Here the quantity and degree of complexity must be taken into account. Finally, the moment of the course in which they are oriented is specified.

Methodology

The research is descriptive, longitudinal and predominantly qualitative. The study was carried out in the 2021 academic year, at the Municipal University Center of Cabaiguán in the Bachelor's Degree in Primary Education. The design of the integrative tasks with a sociocultural-professional approach is described below:

Figure 1

Phases of elaboration of the methodological didactic procedure



Regarding the moments of the design and evaluation process of the tasks, the following is argued:

In the first moment the purpose is to specify the main components of knowing and doing pillars of education that students should appropriate in the subject Biology. In the second moment, it is necessary to master the knowledge system in each topic in the subject Biology, according to its contextualization possibilities. In the third moment, decisions are made regarding:

- The moment in which they are planned, oriented, controlled and evaluated.

- Order of presentation (sequentiality). For this purpose, the degree of complexity and degree of difficulty are taken into account; the latter is analyzed in close relation to the results of the diagnosis of each student.
- Individual and collective evaluation of the students.

The study was based on the theoretical and empirical methods of Lanuez et al. (2010): historical-logical, induction-deduction, document review, observation and group discussion (Table 1).

Table 1

Theoretical and empirical methods

Theoretical methods	**Contribution**
Historical-logical	For the clarification of the different stages of the object in its chronological succession and to reproduce the essence of the main content of its development.
Induction-deduction	In the generalization of the ideas dealt with by various authors about the problem and the formulation of regularities determined from the study of literature and the manifestations of the significance of the teaching-educational process when considering the sociocultural approach and the integrating tasks in the subject Biology, in the integral formation of the part-time students in the center.
Hypothetical and deductive	In the formulation of the guiding idea to be treated in the research and the establishment of generalizations and particularities in the interpretation of the results obtained.
Empirical methods	**Contribution**

Document review	In the review of the bibliography necessary for the analysis of concepts, the correct methods in accordance with the sociocultural approach and the integrative tasks in the subject Biology in the part-time teaching, the educational content in correspondence with the values of the socialist society. In addition, the results achieved by the students were evaluated.
Observation	In the verification of the problems and the incorrect application of the procedures for the integration of knowledge and the sociocultural approach in the teaching of the subject Biology. In the observation of the students' behavior in the development of the teaching-educational process and the evaluation of the contents.
Group discussion	It allowed verifying the effectiveness of the students' participation, learning and motivation for the realization of the integrating tasks.

Marxist-Leninist theory is assumed from the study of its methodological bases. In this respect, it is essential to study the correlation between the objective and the subjective, the development of the studied object (facts and processes), the multilateral analysis that reveals the internal contradictions of the process, which makes possible generalizations from a scientific position.

The unit of analysis was constituted by the 10 students 3rd year of the Bachelor's Degree in Primary Education.

Results and discussion

In the first and second moments, the purpose and objectives of the discipline Studies of Nature in Study Plan E of the Bachelor's Degree in Primary Education are analyzed. It comprises a system of integrated knowledge of Geography, Biology, Chemistry, Physics and Astronomy to prepare the graduate to teach the subjects The World We Live In, History and Natural Sciences. It is oriented to explain the integrity of the phenomena and processes that occur in nature in spite of their diversity. The aim is to form a scientific

conception of the world in the students, characterize the objects and phenomena of nature, their concatenation with the social activity of mankind, to base the ideas of environmental education for sustainable development, to show love for nature and the work created by man, the correct use of the bibliography, the infotechnological resources and the mother tongue. The intention is to consolidate the pedagogical identity, to achieve modes of action that favor the protection of the environment and natural resources and to achieve the comprehension of what is read and heard, with correct oral and written expression, good spelling, handwriting and writing.

In correspondence with the objectives of the analytical program of the Biology II subject within this discipline, the knowledge system and the skills system were taken as a starting point. When contextualizing the knowledge system, it was considered appropriate to consider topics 1, 2 and 3. They deal with the diversity of animals in nature, vertebrates and invertebrates, Cuban fauna and the most significant specimens, the study of the human organism as a whole, individual and collective health, vegetation zones and animal population, the relationship of living beings with the environment and the influence of environmental changes on the components of nature and society (MES, 2017).

At the third moment, the integrative tasks are considered to be structured as follows: Title, Objective, Guidelines for its realization, Methodological guidelines and Bibliography.

With the whole process organized, well structured and with the conditions objectively created, the integrative tasks are presented to teach and learn Biology II from the sociocultural-professional-integrative and developmental approach, in 3rd year students of the four-year Bachelor's degree in Primary Education.

Task 1

Title: Insects important for humans.

Objective: To explain the biological importance of insects on planet Earth, as well as the measures taken by the Cuban government in the prevention of diseases caused by them, so that they contribute to the proper functioning of the organism as a whole.

Guidelines for its realization:

Insects constitute the most numerous group of all terrestrial animals, their diversity and biotic potential have greatly concerned man, so chemical and biological combat techniques have been developed to control pests of this kind. Another important group is the order Coleoptera, the one with the largest number of insects; about 250,000 species have been described, among which are those known as beetles, weevils, and ladybugs.

1. Explain why man has devoted much time to the study of these living organisms.

2. If you compare it with the species belonging to the lower taxonomic groups, what has allowed them to be more successful in their diversification and adaptation to the different regions of the Earth?

3. There are harmful insects and others beneficial to man. Justify the previous affirmation through examples of our country.

4. Man is located in the upper part of the zoological scale, but he does not escape from the effects that insects that are part of his habitat can cause.

   a) Investigate which are the main pests produced by these organisms that affect the environment.
   b) Exemplify with different organisms and the crops they affect.
   c) Investigate how man fights these pests and what chemical products he uses.

5. Mention some of the diseases caused by insects and state what measures have been taken by the Cuban state to protect the population.

   a) Who was the Cuban scientist who discovered the transmitting agent of yellow fever and in what year?

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Methodological guidelines:

1. The group will organize itself for the solution of each task in teams of two students, and will then carry out the planned activity.
2. The teacher will offer levels of assistance for the completion of the task.
3. Each team exposes the results and a group analysis is made, the debate with the contribution of each one and a consensus will be reached.

Task 2

Title: Process caused by human action: deforestation.

Objective: To explain the measures taken by the Cuban government to protect the environment, so that they become involved in their application in favor of the conservation of the human species and nature.

Guidelines for its realization:

Read carefully the following fragment and answer:

Deforestation is the large-scale destruction of forests by human action. This deforestation is proceeding at the rate of seventeen million hectares per year (the area is larger than England, Wales and Northern Ireland combined). Between 1980 and 1990, annual deforestation rates were 12% in Asia and the Pacific, 0.8% in Latin America and 0.7% in Africa. Forest area is generally established in Europe and North America, although the rate of transition from old-growth forest to other forms of forest is high.

1. How important do you think it is to take care of the planet's forests?
2. Make a bar graph where you represent the annual deforestation data for the years 1980-2021.
3. Research in Wikipedia the most significant cause of deforestation.
4. What consequences does this factor have for the soil?

5. What work do scientists do to contribute to the care of the environment, especially forests?

6. Carbon dioxide is a gaseous substance that is found in the air and causes the atmosphere to heat up:

a) What is the relationship between this chemical element and deforestation?

b) Why do you think people refer to the countryside air as being more beneficial for the good development of man?

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Methodological guidelines:

1. The group will organize for the solution of each task in teams of two students, then perform the planned activity.

2. The teacher will offer levels of assistance for the completion of the task.

3. Each team exposes the results and a group analysis is made, the debate with the contribution of each one and a consensus will be reached.

Task 3

Title: Functioning of the organism as a whole.

Objective: To explain the functioning of the organism as a whole so that they develop a conscious attitude about it and its relationship with the environment.

Orientations for its realization:

The human organism is made up of cells, tissues, organs and organ systems that are part of the so-called vegetative systems.

1- Substance transport is a necessity for the proper functioning of the human organism.

a) What is the vegetative function that corresponds to this?

2- It is known that the circulatory system is responsible for the transport of all types of substances to each of the cells:

a) Mention which are these substances that are transported.
b) Explain the path that some of these substances take.
c) Explain through examples how the circulatory system influences in some way the activity of other vegetative systems.
d) What relationship can we establish between the vegetative systems and the Central Nervous System and Hormonal System? Give an example.

3- Read carefully the following situation: Anabel and her dad are on their way to school. In the street they must cross, a traffic policeman directs the passage with his whistle and hand indicating that they must stop immediately. They stop and wait to be able to cross the street.

a) What type of regulation is manifested in this case?
b) Identify the components of the general regulation mechanism that is evident in this case.
c) What are the chemicals that act in the activity performed by the effector?

4- Why is the flow of energy the fundamental element to understand the integrity of the organism?

5- Explain the health achievements of our country today.

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Methodological guidelines:

1- The group will be organized for the solution of the task in teams of two students, and will then carry out the planned activity.

2- The teacher will offer levels of help for the completion of the task.

3- Each team will present the analysis of the results and a consensus will be reached.

In moment 4, as a result, the integrative tasks were implemented in the part-time course from the initial moment of the subject. However, these were developed when teaching the contents related to each task. All students obtained good results at the end of the course; none of them failed.

At moment 5, the evaluation of the integrating tasks was carried out. In this regard, with the observation of the group of 10 students, after introducing the integrating tasks through the guide, it was found that: better results were achieved in the preparation of the students. It was evidenced by the fact that four students obtained 5, three obtained the qualification of 4 points and three obtained 3; which reflects a greater development of skills and the fulfillment of the objectives analyzed in the first moment and the contents treated (second moment) was achieved. It was evidenced in them a more responsible and conscious behavior regarding their pedagogical training, the use of verbal and written language, the use of technologies and oriented bibliography, in the care of the school and community environment, the understanding of the problems that most affect the community, who also transmit their knowledge to their students in the schools through developmental methods in a context of social transformations that are occurring.

When finally assessing the results achieved by the students, after applying the pedagogical observation and evaluating the integrating tasks in the group discussion, it was obtained that:

- Greater motivation was observed in the answers given when inquiring about the contents dealt with, the problems and possible solutions to be undertaken from the school.
- Better communication and relationship with the teachers for the realization of the integrative tasks.
- Greater development of skills to establish conceptual links and to be able to respond correctly to the questions formulated by the professor.
- Development of cognitive independence to search for other bibliographic sources and to respond to the possible solutions presented on the topic in their local environment.

This experience has been continued in the groups during the 2022 academic year, where the effectiveness of the integrating tasks in the teaching-educational process has been shown by considering the sociocultural approach, which has favorably influenced the transformation of the students' behavior, the knowledge acquired and the responsible attitude towards the environment. It contributes to the hopeful improvement in the integral formation of man in today's Cuban society.

Conclusion

The evaluation of the integrative tasks based on the sociocultural-professional approach, confirms its contribution to the development of the students majoring in Primary Education at the Municipal University Center. They show greater motivation for its realization when inquiring about the necessary contents. It also favors the communication process, the establishment of conceptual nodes and the development of their cognitive independence.

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Conflict of interest

The authors declare that they have no conflicts of interest.

Authors' contribution

T. P. P. A.: Literature search and review, design of the integrative tasks, application of evaluation instruments, compilation of the information resulting from the applied instruments, writing of the original, revision and final version of the article, revision of the application of the applied bibliographic standard.

J. R. C. P.: Literature search and review, application of instruments, statistical analysis, revision and final version of the article, review of the application of the applied bibliographic standard.

I. P. B.: Literature search and review, application of instruments, analysis of the data obtained, revision and final version of the article.