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The integrative exercises in the discipline of Investigative Labor Training in the speech therapy career

Los ejercicios integradores en la disciplina Formación Laboral Investigativa en la carrera Logopedia

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ABSTRACT

The training of a competent professional requires an organized, scientific and systematic process, which allows the student to solve, gradually, problems of the reality of their field of action, a task in which the discipline Investigative Labor Training in the career Bachelor in Language therapy occupies the central position due to its role in the comprehensive of the education university student and its interdisciplinary nature. Through interdisciplinary work, a system of integrative exercises was established for the development of professional skills in students of the career. During the 2017-Translated from the original in Spanish

2018 school year, the career at Oriente university had an enrollment of 120 students who were considered as a sample, as well as 15 teachers. Methods such as analysis-synthesis, systemic structure and modeling were used. These methods made it possible to determine the methodological structure of the exercises. The system of integrative exercises was applied evidencing a qualitative and quantitative increase in the results achieved by the students which demonstrates its validity and possibilities of extension systematization.

Key words: interdisciplinary work; cognitive node; integrative exercises; discipline.

RESUMEN

formación de un profesional competente requiere de un proceso organizado, científico y sistemático, que permita al estudiante solucionar, de manera gradual, problemas de la realidad de su campo de actuación, tarea en la cual la disciplina Formación Laboral Investigativa en la carrera Licenciatura Educación Logopedia ocupa posición central por su función en la formación integral del estudiante universitario por carácter У su interdisciplinario. A través del trabajo interdisciplinario estableció se sistema de ejercicios integradores para el desarrollo de habilidades profesionales en los estudiantes de la carrera. Durante el curso escolar 2017-2018 la carrera en la Universidad de Oriente contaba con una matrícula de 120 estudiantes los que fueron considerados como muestra, así como 15 profesores. Se utilizaron métodos como análisis-síntesis, sistémico estructural y modelación que posibilitaron determinar la estructura metodológica de los ejercicios. El sistema de ejercicios integradores fue aplicado evidenciándose un aumento cualitativo y cuantitativo en los resultados alcanzados por los estudiantes lo que demuestra su validez y posibilidades de extensión y sistematización.

Palabras clave: interdisciplinariedad; nodo cognitivo; ejercicios integradores; disciplina.

INTRODUCTION

The development of modern society demands men capable of solvina problems complex with an interdisciplinary thinking, for this in Cuban universities a discipline has been conceived, which by its characteristics contributes to form this type of thinking in students. In this regard (Horruitinier Silva, 2006) it is proposed that this integrates discipline the main contributions of the career disciplines and constitutes the center of the training process, since it makes it possible to provide answers to professional problems, so that Through it, the training of professional acting modes is achieved (Horruitinier Silva, 2006; MES, 2016, 2018).

The Investigative Labor Training (FLI) discipline aims to enable the student to be able to solve the various problems that they will face in the exercise of the profession, as an essential skill in each of the stages of their training and use the methods of educational research in the systematic improvement of its performance.

Its general objective is derived in each year in specific objectives, so that it reveals how the student travels to achieve mastery of the object of the profession. The essential idea in the design of research work training activities is the upward movement of content depth levels, in line with the objectives of the discipline in each academic year.

The FLI discipline constitutes the central component of the training system of the future speech therapist; It helps to support the development of professional from different educational skills environments. In it all the contents of the curriculum are synthesized, the different parts of the whole are globalized in a single unit, not as a mere sum of the different components of the student's object, but conceives of the new qualities that arise, as a consequence of the systemic interaction of the components of the formative process that guarantee coherence between the contents of the different disciplines of the career curriculum, which constitutes the basis for guaranteeing the achievement of interdisciplinary relationships.

These relationships are necessary because at the present time the great content volume of that different disciplines have is faced, hence their integration is essential to assimilate and operate with them. The integration of knowledge and the improvement of the process in its application remains a recurring theme. Its materialization leads to an interdisciplinary process. Interdisciplinarity is currently considered as a principle of epistemological reorganization of scientific disciplines (Fiallo Rodríguez, 2004).

In this way, the growing interest and the need to establish interdisciplinary relationships in the teaching-learning process with greater emphasis on the solution of professional problems, an important aspect of the current work of Cuban universities and other parts of the world, is understood.

In the present work the following definition is assumed "Interdisciplinarity is a work process and philosophy, it is a way of thinking and proceeding to know the complexity of objective reality and solve any of the complex problems it poses" (Fiallo Rodriguez, 2004, p. 28). With this, interdisciplinarity is conceived

both from theory and from practice in professional training.

This the own author in text Interdisciplinarity in school (Fiallo Rodríguez, 2001), proposes four stages establishment the interdisciplinarity in the teachinglearning process , which go from the conception of the general curriculum design, the elaboration of the programs of the disciplines, the construction of books and bibliographic materials, until reaching the implementation of the educational design in the school that corresponds to the teaching group.

As already noted, interdisciplinary practice means being, thinking, doing and feeling when considering the human being and the surrounding environment, becoming a premise to achieve relations between the different scientific disciplines that converge on a particular object. This integration enriches the conceptual frameworks, the procedures, as well as the teaching and research methodologies of the sciences involved. This can only be the result of the cooperated methodological work of the pedagogical collective.

From a theoretical point of view, interdisciplinarity leads to the establishment of relationships necessary moments of interconnection between disciplines (Henao Hueso and Sánchez Arce, 2019) , allows integration to be understood and addressed real complex problems, as well as to relate abstract theories with situations and specific cases (Herná ndez Armenta and DOMi nguez, 2019), is the systematic search of theoretical methodological integration а multidimensional conception of phenomena (Ruiz vila, 2019).

For the practical instrumentation of interdisciplinarity in the Logopedia career of the Universidad de Oriente, three

dimensions are proposed (Fornaris Méndez and Huepp Ramos, 2019).

- The curricular dimension: it refers to the stage of the analysis, in the pedagogical collective, of the curricula of the disciplines, starting from knowing their place, functions and specificities in the school curriculum, identifying the interdisciplinary nodes that indicate interdependencies, convergences and the complementarities between them.
- In this process, not only the knowledge related is examined, but also the contribution of each of them to the learning process, always considering the student as the subject of the process.
- From this point of view interdisciplinary relationship can be considered a systemic relationship between the disciplines common objectives, where each subject as a system component establishes close ties to achieve the change in cognitive node.
- The criterion of Álvarez Pérez (2004) is shared that "the cognitive node is a point of accumulation of knowledge propositions, (concepts, laws, principles, theories, models) around a concept or a skill" (p. 5). This author recognizes the need for students to know existence of these nodes and to participate in their construction and enrichment, which gives them the possibility of being able to use them in solving problems, fundamentally those that require the competition of different disciplines. The cognitive component of the problem considered constitutes interdisciplinary node, which connects the main nodes of the different disciplines.

- The didactic dimension: includes modeling the of the interdisciplinary strategy to be considering, applied, among others, the didactic functions and components and the relationship between the general didactics and those of each discipline. This does not mean, the search for a unique didactic, typical of unacceptable reductionism, but the possibility of finding various alternatives didactic that contribute to the improvement of the teaching- learning process, based on work forms that favor the development of students from perspective the interdisciplinarity.
- The pedagogical dimension: it is where the didactic model developed through interdisciplinary methodological work that is enriched, evaluated and transformed according to what determines the practice during the teaching- learning process is tested. In it the students take a decisive and active part since an integration of contents in their learning is expected from them, which is achieved when the knowledge of the different systems disciplines and procedures are interrelated, based on their internal logic. This dialectical relationship generates demands or macro-objectives that must be identified as the new objectives that are presented to them during teaching.

There are dissimilar actions for the development of professional skills in an integrated manner, which are deployed in the teaching- learning process of higher education through the academic, research and labor, extension components; components that are taken into account by the FLI discipline for the integrated management of the training order process, in to systematize professional skills taking into account also the productive character in accordance with the conception of the profesional career (Fernández Artiles and Fundora Martínez, 2015).

This integrative approach is only possible from the interdisciplinary action that can be specified with the execution of interdisciplinary meetings with the purpose of strengthening the methodological work, which will allow to extend its results to the different activities of the student's training process (academic, labor, research and extension agents).

The need for collective analysis to determine the interdisciplinary nodes in the FLI discipline, is a problem to be solved by the professors of the different disciplines of the career, which requires of them an elementary domain of the content of the remaining disciplines and of their relationship with the discipline to which they belong.

That is why the Ministry of Higher Education stipulates:

"The interdisciplinary groups in a career may be constituted, both at the headquarters and in the municipal and subsidiary university centers, with the purpose of achieving consistent approaches in integration systematization of content of different disciplines or from other needs that arise in The development of the training process.This group will bring together professors from different disciplines, led by a coordinating professor of the interdisciplinary collective appointed by the dean of the faculty that directs the career, and they do not necessarily have a permanent character " (MES, 2018, p. 659).

In this way, from the governing documents of the methodological work, space is granted for the interdisciplinary work of the career group. The Investigative Labor Training discipline is the main scenario for the development of interdisciplinary relationships, displaying various variants to achieve them, one of them are the integrative exercises:

The integrative exercises are teaching-learning situations designed from an integrative axis (professional problem) from the professional model formed by situations whose complexity allows the student to solve them in a short period of time (between 45 and 90 minutes). Unlike the exercises it has been considered that the integrative task is constituted by problems of greater complexity that require a broader integration of labor and research for its solution, so the time spent solving it is greater.

In this way, the integrative exercises are those that, based on the solution of professional problems and the determination of interdisciplinary cognitive nodes, contribute to the development of modes of professional performance in students, to efficiently achieve the direction of the pedagogical process that plans, organizes, regulates, controls and evaluates, allowing you to fulfill the tasks and functions of your profession.

The integrating exercises that are planned are aimed at introducing the student to the content of the profession from the theoretical foundations provided by the different disciplines of the study plan, participation in extracurricular and extracurricular development contexts based on the knowledge of the fundamentals of the

different disciplines that converge in their future profession in close connection with the practical experiences in educational institutions and the result of the professional exchange that occurs in the educational institution where they carry out their practices.

MATERIALS AND METHODS

the 2016-2017 academic year, In different research methods instruments were applied in the Speech Therapist of the Faculty of Education Sciences of the Universidad de Oriente such as: class observations, pedagogical tests, interviews with students and professors, with the objective determine the development achieved in by interdisciplinary relationships students from third to fifth years and professors of the career.

The documentary analysis contributed to determine the main regularities in the work developed by the Investigative Labor Training discipline.

Analysis and synthesis used the with the aim of studying the process to reveal their essential relationships and general characteristics.

The observation to classes made it possible to verify the actions carried out by teachers related to interdisciplinary work. The interview with the professors allowed to know their criteria on the subjects related to interdisciplinarity, the integrative exercises and the interdisciplinary cognitive nodes, as well as the actions that they carry out to fulfill these aspects. The interviews with students possible the knowledge of their develop views οn how to interdisciplinarity in the training activities in which they participate.

The application of pedagogical tests (integrative exercises) made it possible to determine the concrete results that

students achieve during the solution of these types of exercises.

For the analysis of the results achieved with the application of the integrative exercises in the different months, the percentage calculation was used as a mathematical method.

The initial diagnosis allowed to determine the following regularities:

- Difficulties in establishing links and relationships between previous knowledge and new knowledge, by students.
- Students reflect knowledge in a fragmented way and are generally not able to transfer them, or apply them in an integrated way to solve reality problems.
- Difficulties in establishing relationships between disciplines, as well as the determination of conceptual nodes, by teachers.
- Low levels of efficiency in the results of the students in the exercises and integrative tasks performed.

Given this problem, various integrative exercises were designed, applied and evaluated, which allowed the establishment of links and relationships between the different knowledge of the career, starting with the establishment of interdisciplinary relationships.

The use of modeling led to the design of the actions of the discipline and the content of the integrative exercises and the application of the system approach allowed the establishment of the hierarchical structure of the component elements of the exercises and the determination of their functional relationships.

RESULTS

The actions developed by the discipline for work with the integrative exercises were:

- 1. Analyze the model of the professional (the mode of action of the professional) and the objectives of the year.
- 2. Analyze programs the disciplines and the curricula.
- 3. Define invariants of the knowledge system that will be worked on at the stage.
- 4. Define skills necessary for the stage.
- 5. Determine conceptual nuclei of the subjects. (Comparatively analyzing the objectives and programs of the different disciplines that come together in the curriculum).
- 6. Determine the links established between cognitive nodes.
- 7. Select the integrating axis and the guiding subject.
- 8. Study the characterization of the group. Potentialities and weaknesses. Results of the diagnosis of the subjects.
- 9. Discuss and analyze a first approximation of the integrative exercise.
- 10. Approve the integrative exercise and its objective by the collective.
- 11. Determine the resolution deadlines and way of working for students.
- 12. Determine forms of control and evaluation of the exercises.

Based on the system of actions mentioned above, the following structure of the integrative exercises was modeled.

- Integrating central idea. (It is selected from the Model of the professional, from the professional problems, the general objectives of the career).
- Subjects that are integrated.
- Cognitive nodes that work.
- Objective.
- Questions.
- Key (the work does not include the password due to its extension).
- Evaluation.

Below are some examples of the integrative exercises designed:

5th year. Plan D

Integrative axis: Apply scientific methods in solving the general and specific problems of speech therapy and related sciences.

Subjects that are integrated: Research methodology - Writing scientific texts (Own course).

Cognitive node: The scientific text.

Objective: To base the diploma work as a scientific text.

Content of the exercise:

From his diploma work:

- Fundamentally the use of argumentative text and intertexts, for the construction of theoretical foundations.
- Exemplify what unifying elements of the text you used in the introduction.
- Fundamentally with 3 characteristics why your research can be classified as a scientific text.

4th year. Plan D

Integrative Axis: Plan the process of comprehensive speech therapy.

Subjects that are integrated: Speech therapy IV- Labor Education and its teaching. (Plan D)

Cognitive node: Planning of the speech therapy class.

Objective: Plan the process of speech therapy, promoting the strengthening of knowledge of Education Labor.

Content of the exercise:

From a protocol.

- a) Issue the speech therapy diagnosis.
- b) Develop the speech therapy strategy.
- c) Plan a speech therapy class, where you consider the elements for the preparation of an article with paper, cardboard, fabrics or recovered materials (content received in the subject Labor Education and its teaching).
- d) Value how this knowledge of Labor Education and its teaching contributes to its professional performance.

Integrative Axis: Apply scientific methods in solving the general and specific problems of speech therapy and related sciences.

Subjects that are integrated: Speech therapy V - Research methodology.

Cognitive node: Theoretical foundations of the scientific proposal.

Objective: To base the scientific proposal from the contributions of the cultural historical school.

Content of the exercise:

From his scientific research:

- a) Explain what contribution you intend to give to speech therapy as a science.
- b) Exemplify your proposal and how it would solve the problem.
- c) How in your proposal do you take into account the tenets of the historical-cultural theory of Vigotski and his followers?

3rd year Plan D (can be applied in Plan E for the similarity of the subjects in the year)

Integrative Axis: Characterize the language of children, adolescents, youth of special education.

Subjects that are integrated: Logopedia IV - Psychology.

Cognitive node: Regularities of language in disabilities.

Objective: Explain the regularities of language in intellectual disability.

Content of the exercise:

- 1. Taking into account their professional experiences exemplify the relationship between intellectual disability and language.
- 2. Explain why there may be a delay in the secondary language to an intellectual disability.

Integrative Axis: Direct the process of comprehensive speech therapy in the correction-compensation of language and communication difficulties and disorders, as well as the promotion of the development of the mother tongue.

Subjects that are integrated: Logopedia III - Mother Language Teaching.

Cognitive node: Teaching- learning process of the mother tongue in children with communication and language disorders.

Objective: Explain the methodological procedure for the development of language skills in schoolchildren with communication and language disorders.

Content of the exercise:

Explain through three examples how language skills can be developed in schoolchildren with communication and language disorders through a speech therapy treatment.

Integrative Axis: Plan the process of comprehensive speech therapy in the correction-compensation of language and communication difficulties and disorders, as well as the development of the mother tongue.

Subjects that are integrated: Speech therapy III - Teaching of the Mother tongue.

Cognitive node: Teaching- learning process of the mother tongue in schoolchildren with communication and language disorders.

Objective: Exemplify the methodological procedure for language development through a component of the Mother Language.

Content of the exercise:

Exemplify how through a component of the Mother tongue, the language of a schoolchild with language disorders can be developed.

Integrative Axis: Apply scientific methods and techniques in solving general and specific problems of speech therapy and related sciences.

Subjects that are integrated: Psychology II (previously received knowledge) - Logopedia III.

Cognitive node: Techniques for language development.

Objective: To base the application of psychotherapy in case of language disorders.

Content of the exercise:

Fundamentally the importance of the application of psychotherapy, in a schoolchild with language disorder. Exemplify with two of the psychotherapeutic resources studied.

Integrative Axis: Explain the development of children's language and its interrelation with psychic processes.

Subjects that are integrated: Psychology I (previously received knowledge) - Logopedia III.

Cognitive node: Integral language stimulation.

Objective: Explain the interrelationship between psychic processes and language in their development.

Content of the exercise:

1. From the processes that make up the cognitive activity, select one, explain its interrelation with language and exemplify how it would contribute to its development in a speech therapy class.

Integrative Axis: Plan the speech therapy process.

Subjects that are integrated: Logopedia III - General Didactics (content previously received).

Cognitive node: The speech therapy class.

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Objective: Plan a speech therapy class taking into account the didactic components.

Content of the exercise:

- 1. Plan a speech therapy class for a schoolchild with language disorder.
- 2. Explain how the didactic components of the educational teaching process (at least three of them) manifest in it.

2nd year. Plan E

Integrative Axis: Apply scientific methods and techniques in solving general and specific problems of speech therapy and related sciences.

Subjects that are integrated: Psychology III - Logopedia II.

Cognitive node: Integral language stimulation.

Objective: Explain psychotherapeutic activities aimed at stimulating language development in students with intellectual disabilities.

Content of the exercise:

Of schoolchildren with a diagnosis of intellectual disability.

- 1. Characterize some of the psychological regularities of the personality of a selected scholar in the school where he practices.
- 2. Design a psychotherapeutic activity aimed at language stimulation.
- 3. Explain how this activity influences language development.

Integrative Axis: Diagnose children with language and communication disorders and their environments to design or

redesign comprehensive speech therapy strategies.

Subjects that are integrated: Psychology II - Logopedia I.

Cognitive Node: The Speech Therapist Class

Objective: To argue the importance of the diagnosis for the elaboration of the attention strategy and the development of the speech therapy class.

Content of the exercise:

- 1. Create a scheme where the speech therapy exploration process is represented.
- 2. Argue the importance of the diagnosis for the elaboration of the attention strategy and the development of the speech therapy class.

Integrative Axis: Explain the fundamentals of speech therapy as a science.

Subjects that are integrated: Psychology I - Logopedia II.

Cognitive Node: Theoretical Foundations of Speech Therapy.

Objective: Explain the postulates of cultural historical theory in speech therapy as a science.

Content of the exercise:

The postulates theory of historical cultural Vigotski and his followers, explain how evidence of them in speech therapy.

Integrative Axis: Apply the scientific method in solving general and specific problems of speech therapy and related sciences.

Subjects that are integrated: Anatomy and Physiology of human development - Logopedia I.

Cognitive node: Language mechanism.

Objective: Explain the mechanism of language.

Content of the exercise:

Take back the knowledge you have about Anatomy and Physiology of human development, Psychology, and Linguistics in relation to language and communication and explain the mechanism of language in a flowchart.

1st year. Plan E

Integrative Axis: Apply the scientific method in solving general and specific problems of speech therapy and related sciences.

Subjects that are integrated: Anatomy and Physiology of human development I - Language and Communication.

Cognitive node: Language mechanism.

Objective: To explain the phonoarticulatory apparatus, through its structures and its functions.

Content of the exercise:

From the phonoarticulatory apparatus:

- 1. Mention the structures that integrate it and explain its functions.
- 2. Mention two alterations that may appear.

Integrative Axis: Apply the scientific method in solving general and specific problems of speech therapy and related sciences.

Subjects *that are integrated:* Pedagogy and Language and Communication.

Cognitive node: The teacher Speech Therapist as an education professional.

Objective: To base the importance of the professional qualities of the speech therapist teacher.

Content of the exercise:

- 1. Using the knowledge received in the Pedagogy and Language and Communication subjects, perform an analysis of the teacher as an educator and then:
 - Exemplify the professional qualities of the speech therapist teacher.
 - Fundamentally the importance of these qualities.
 - How do you consider yourself to assume the role of teacher speech therapist?

Integrative Axis: Characterize children of the regular and special education of the family and community environment where they operate.

Subjects that are integrated: Anatomy and Physiology of Human Development II - Pedagogy - Psychology I.

Cognitive node: Characterization of the scholar.

Objective: To characterize a schoolboy from the anatomical, pedagogical, psychological point of view.

Content of the exercise:

In the development of your work practice, select a schoolchild and perform an anatomical, pedagogical and psychological characterization.

Following the guidelines for the elaboration of the integrative exercises emanated from the discipline group, in each of the years the formation of other exercises was proceeded so that a greater number of subjects were systematically and systematically integrated.

From October 2017, the systematic application of integrative exercises in each of the teaching groups of the career began.

The results obtained at the beginning and end of the work performed are shown below. (Tables 1 and 2)

Tabla 1 - Results of the application of the exercises in tegradores, October 2017

Year	Presented	Approved	Disapproved
1st	48	40	8
2nd	29	27	2
3rd	12	10	2
4th	10	9	1
5th	21	19	2
total	120	105	15
%		87,50	12,5

Year	Presented	Approved	Disapproved
1st	45	42	4
2nd	27	26	1
3rd	12	11	1
4th	10	10	1
5th	21	21	0
Total	115	110	7
%		95.6	6.00

Tabla 2 - Results of the application of the integrative exercises, May 2018

DISCUSSION

The methodological work in the collective of the Investigative Labor Training discipline made possible systematization of the preparation of the professors since it became necessary the deep study of the different disciplines that make up the curriculum in the career in a general way and in each year in particular which, it is essential for the establishment of interdisciplinary coanitive nodes and subsequent integrators building exercises. In many respects they became the dynamic axes of the process that allowed , the systematization of the contents taught by the different subjects, the nonfragmentation of knowledge, the knowledge application of that situations of the profession, the training of professional skills by On the part of the students, coherence the interdisciplinary knowledge among the members of the career group when working together with the contents (knowledge, skills and values) common between the disciplines and years, as well as the training of an interdisciplinary thinking in the teachers and students, during the treatment of the same situation through several disciplines.

The integrative exercises in the training process of the speech therapist teacher were the product of interdisciplinary work in the career and the year groups that prevailed in the training process, so that students' learning could be properly *Translated from the original in Spanish*

conducted in close relation to the formative context in that they were , aspect in which the necessary adjustments must be continuously made to temper the training of the students to the changes that are taking place with the improvement of the National Education System.

In addition, it is necessary to take into consideration that the object of work of the speech therapist teacher is the process of comprehensive speech therapy assistance to children, young people in adolescents and educational institutions, the family and the community in dissimilar institutions that can range from the children's circle to school teaching, considering within this range, centers for special education, so interdisciplinary thinking should develop in students the career as a way to solve professional problems it faces.

The applied exercises allowed that in the solution of a problem the knowledge of different disciplines were integrated, but the determination of the integrating axis constitutes the aspect that , from the methodological point of view , allowed to find the way to determine what is the element of the knowledge that is present in each discipline to, from it, solve the problem raised, which is consistent with what was raised by Fergusson Ramírez, Gorina Sánchez, Alonso Berenguer and Salgado Castillo (2018) who point out the importance of the search for teaching alternatives that favor interdisciplinarity.

The regularities that were presented in the solution of the integrative exercises were established, an aspect that allowed the redesign of the academic strategies with the objective of offering treatment of the difficulties detected, in this regard Perera Mesa and Betancourt Rodríguez (2015) point out the need to carry out this analysis in each subject (discipline), as a way to adapt the objectives to be achieved in the training process to the particularities of the students' development and to the characteristics of the context in which they work.

These results were also confirmed by the findings in relation to the students' perception of the main integrating discipline, since they identify it as such as it brings them closer to the object of the profession, which results in their motivation; as well as the need for the consideration of integrative exercises as an activity based on the historical cultural approach (Cabrera, Vázquez, and Granela, 2018), so the objective was considered in its structure as the guiding component of the teachinglearning process, of the same way the participation of the students in the determination of the cognitive nodes, which propitiates a greater motivation towards the activities where these contents are integrated.

demonstrated that Τt was the methodological work of the Investigative Labor Training is eminently interdisciplinary and should be conducted from that approach, to achieve the gradual formation of the knowledge and skills of the students in direct relation with the object of their profession, therefore the teaching process - Learning cannot allow fractional learning of the contents, which is consistent with the approaches of León Méndez and Valdés Rojas (2019).

The integrative exercises in the training process of the speech therapist teacher were the product of the methodological work in the career and the year groups *Translated from the original in Spanish*

as an expression of the interdisciplinary nature that should prevail in the training process, so that students' learning can be conducted in close relationship with the training context in which they are found.

BIBLIOGRAPHIC REFERENCES

Álvarez Pérez, M. (2004). La interdisciplinariedad en la enseñanza-aprendizaje de las ciencias. En M. Álvarez Pérez (Ed.), Interdisciplinariedad: Una aproximación desde la enseñanza aprendizaje de las ciencias (pp. 1-19). La Habana: Editorial Pueblo y Educación.

Cabrera, D. A., Vázquez, V. V., y
Granela, H. D. (2018). La
disciplina principal integradora de
la carrera Logofonoaudiología
desde la perspectiva de los
estudiantes. Revista Cubana de
Tecnología de la Salud, 9(2), 4-14.

Fergusson Ramírez, E. M., Gorina Sánchez, A., Alonso Berenguer, I., y Salgado Castillo, A. (2018). Perfeccionando los procedimientos didácticos para la formación investigativa de estudiantes de Ciencia de la Computación. Atenas, 4(44), 28-45.

Fernández Artiles, O. E., y Fundora Martínez, C. L. (2015). La Formación Laboral - Investigativa como disciplina principal integradora en la formación inicial del maestro primario. *Atenas*, 4(32).

Fiallo Rodríguez, J. (2001). La interdisciplinariedad en la escuela. En ICCP (Ed.). La Habana: MINED.

Fiallo Rodríguez, J. (2004). La interdisciplinariedad: un concepto

- «muy conocido». En M. Álvarez Pérez (Ed.), *Interdisciplinariedad: Una aproximación desde la enseñanza aprendizaje de las ciencias* (pp. 20-36). La Habana: Editorial Pueblo y Educación.
- Fornaris Méndez, M., y Huepp Ramos, F. L. (2019). Experiencias de trabajo en la disciplina Formación Laboral Investigativa en la carrera Logopedia. *Maestro y Sociedad*, 16(2), 208-221.
- Henao Hueso, O., y Sánchez Arce, L. (2019). La educación ambiental desde la interdisciplinariedad en la Educación Básica Secundaria. Revista Científica Agroecosistemas, 7(1), 17-25.
- Hernandez-Armenta, I., y Dominguez, A. (2019). Evaluación de percepciones sobre la Interdisciplinariedad: Validación de instrumento para estudiantes de educación superior. Formación universitaria, 12(3). doi: http://dx.doi.org/10.4067/S0718-50062019000300027

- Horruitinier Silva, P. (2006). La universidad cubana: el modelo de formación. La Habana: Editorial Félix Varela.
- MES (2016). Documentos Rectores Licenciatura en Educación. Logopedia. La Habana: MES.
- MES (2018). Resolución No. 2/2018. Gaceta Oficial de la República de Cuba, (25), 647.
- Perera Mesa, A., y Betancourt Rodríguez, M. Z. (2015). El establecimiento de relaciones interdisciplinarias, una via para contribuir a la significatividad del aprendizaje del contenido químico en el primer año de la Licenciatura en Educación Biología Geografía. Atenas, 2(30), 27-38.
- Ruiz Avila, D. (2019). Desde el mirador indoamericano:
 Interdisciplinariedad. Lingüística y Literatura. *Picarina del sur, 39*.



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