



Original article

Pedagogical conception for the formation of professional pedagogical skills in the Bachelor's Degree in Special Education

Concepción pedagógica para la formación de habilidades profesionales pedagógicas en la Licenciatura en Educación Especial

Concepção pedagógica para o treinamento de habilidades pedagógicas profissionais no Curso de Bacharelado em Educação Especial

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ABSTRACT

The search for quality standards in the training of professionals is an international consensus of Higher Education institutions. The Cuban university conceives educational excellence through responses to social problems. As part of the demands of the community of visually impaired people, limitations are declared in the orientation and mobility of their associates, which hinders their autonomy and quality of life. In order to respond scientifically, a study was carried out with the support of theoretical level methods, such as analysis and synthesis, induction and deduction, systemic structural functional and modeling; at the empirical level: document analysis, scientific observation, interview and expert consultation (Delphy). All with the objective of proposing a pedagogical conception to contribute to the formation of professional pedagogical skills in the students of the Bachelor's Degree in Special Education at the University of Pinar del Río "Hermanos Saíz Montes de Oca", for the orientation and mobility of students with visual impairment. The results allowed proposing three scientific ideas centered on an intersectional approach, which emphasizes the formation of professional pedagogical skills linked to interdisciplinary-intersectorial, metacognitive work and with the use of simulation as a method for self-management and the development of skills: interpreting clinical diagnosis, characterizing, modeling and directing. A methodology containing recommendations, stages and examples is proposed for its implementation. The experts

agree on the high theoretical-practical value of the proposal.

Keywords: visual impairment; pedagogical professional skills training; special education degree; orientation and mobility.

RESUMEN

La búsqueda de los estándares de calidad en la formación de los profesionales es un consenso internacional de las instituciones de Educación Superior. La universidad cubana concibe la excelencia educativa a través de las respuestas a las problemáticas sociales. Como parte de las demandas de la comunidad de personas con discapacidad visual, se declaran limitaciones en la orientación y movilidad de sus asociados, lo que dificulta su autonomía y calidad de vida. Para responder por la vía científica, se realizó un estudio con apoyo de los métodos del nivel teórico, como el análisis y síntesis, la inducción y deducción, sistémico estructural funcional y la modelación; del nivel empírico: el análisis de documentos, la observación científica, la entrevista y la consulta a expertos (Delphy). Todo con el objetivo de proponer una concepción pedagógica para contribuir a la formación de habilidades profesionales pedagógicas en los estudiantes de la carrera Licenciatura en Educación Especial en la Universidad de Pinar del Río "Hermanos Saíz Montes de Oca", para la orientación y movilidad de los educandos con discapacidad visual. Los resultados permitieron proponer tres ideas científicas centradas en un enfoque interseccional, que pondera la formación de habilidades profesionales pedagógicas vinculado al trabajo interdisciplinario-intersectorial, metacognitivo y con la utilización de la simulación como método para la autogestión y el desarrollo de las habilidades: interpretar el diagnóstico clínico, caracterizar, modelar y dirigir. Para su implementación se propone una metodología que contiene recomendaciones, etapas y ejemplos. Los expertos coinciden en el alto valor teórico-práctico de la propuesta.

Palabras clave: discapacidad visual; formación de habilidades profesionales pedagógicas; licenciatura en educación especial; orientación y movilidad.

RESUMO

A busca de padrões de qualidade na formação de profissionais é um consenso internacional das instituições de ensino superior. A universidade cubana concebe a excelência educacional por meio de respostas a problemas sociais. Como parte das demandas da comunidade de pessoas com deficiência visual, são declaradas limitações na orientação e mobilidade de seus associados, o que dificulta sua autonomia e qualidade de vida. Para responder cientificamente, foi realizado um estudo com o apoio de métodos em nível teórico, como análise e síntese, indução e dedução, funcional estrutural sistêmica e modelagem; em nível empírico: análise de documentos, observação científica, entrevista e consulta a especialistas (Delphy). Tudo isso com o objetivo de propor uma concepção pedagógica que contribua para a formação de habilidades pedagógicas profissionais nos alunos do curso de Educação Especial da Universidade de Pinar del Río "Hermanos Saíz Montes de Oca", para a orientação e mobilidade de alunos com deficiência visual. Os resultados nos permitiram propor três ideias científicas centradas em uma abordagem interseccional, que enfatiza o treinamento de habilidades pedagógicas profissionais vinculadas ao trabalho interdisciplinar-intersectorial, metacognitivo e ao uso da simulação como método de autogestão e desenvolvimento das seguintes habilidades: interpretação de diagnóstico clínico, caracterização, modelagem e direção. Para sua implementação, é proposta uma metodologia com recomendações, etapas e exemplos. Os especialistas concordam com o alto valor teórico e prático da proposta.

Palavras-chave: deficiência visual; treinamento de habilidades profissionais pedagógicas; diploma de educação especial; orientação e mobilidade.

INTRODUCTION

The accelerated scientific and technical development of today's world contrasts with the great socioeconomic, political and humanitarian crisis exacerbated by the COVID-19 pandemic. International agreements such as the 2030 Agenda call for the need to achieve sustainable development goals and objectives. This purpose seeks equity and inclusion as pillars, which requires professionals trained for such purposes.

"Attention to diversity is one of the main challenges of today's Cuban society, and to do so, guaranteeing quality health and education services to all in an inclusive, dynamic and flexible context will enhance learning that favors their self-validation, giving them security and confidence in their autonomy" (Hernández Estrada *et al.*, 2024, p. 3). To achieve this goal, a training process with a high commitment to solving the professional problems of educational practice is required.

"In Cuba, the Ministry of Higher Education conceives the training of university professionals as continuous and encompasses three stages: undergraduate training in broad-based careers (...); preparation for employment (...), and postgraduate training" (Rojas Rodríguez, 2022, p. 195).

In Cuba, teacher training for Special Education began in 1962, as a result of the creation of the Department of Special Education of the Ministry of Education (MINED). This creation was determined by the need to expand the network of centers specialized in the care of subjects with special educational needs (Martínez Cepena *et*

al., 2021). Over the years, teacher training has been perfected in close connection between the university and the country's network of educational institutions, with an emphasis on special schools.

Currently, a total of 79 students with visual disabilities (without any other associated disability) are attended by the Special School as a Resource and Support Center, as well as by support teachers, enrolled in the different educational levels and 72.97% in primary education (here includes those enrolled in Special Education) (Hernández Estrada *et al.*, 2024). Their care demands coherent interdisciplinary and intersectoral work between the MINED, the Ministry of Public Health (MINSAP) and the Ministry of Higher Education (MES), among others.

However, despite following a close relationship between the logic of science that supports the care of children, adolescents and young people with visual impairments, educational practice demands the solution of professional problems whose uniqueness is not always explicit and contextualized in the professional model or in the programs of the disciplines that structure the curriculum of the Bachelor's Degree in Special Education. Such is the case of professional pedagogical skills for the orientation and mobility of students with visual impairments.

The problem focuses on the limitations of students of the Bachelor's Degree in Special Education, to carry out actions and operations in a conscious and systemic way that leads to the direction of the educational process for the comprehensive care of students with visual disabilities, due to deficiencies in the current conception of the formation of professional pedagogical skills for the singularity of achieving an autonomous and independent movement in space for students with visual disabilities.

The research belongs to the project "University-Diversity in the training of professionals for an Inclusive and Sustainable Development (UDDIS)

and aims to propose a pedagogical concept that contributes to the formation of professional pedagogical skills in students of the Bachelor's Degree in Special Education at the University of Pinar del Río "Hermanos Saíz Montes de Oca", for the orientation and mobility of students with visual disabilities.

MATERIALS AND METHODS

The study was conducted between 2023 and July 2024. A study group was intentionally selected, consisting of 15 third-year students of the Bachelor's Degree in Special Education at the University of Pinar del Río, 12 professors of the degree and eight teachers, including directors, specialists and teachers; of them, five were tutor teachers from the "José Martí" Special School, in the province of Pinar del Río.

The dialectical-materialist method is adopted, which allowed for a deeper study of the foundations of the formation of professional pedagogical skills as a process, with its internal and external contradictions. It enabled the selection of methods that guarantee its execution, in order to meet the proposed objective; among them are the methods of the theoretical and empirical level, as well as statistical-mathematical procedures.

Theoretical level methods

Analysis and synthesis: This was used during the consultation and critical evaluation of the reviewed literature, in the application of scientific knowledge methods and in the results obtained in the diagnosis and evaluation phases of the results.

Induction and deduction: facilitated the achievement of the necessary abstractions that allowed the interpretation of the results with respect to the formation of professional pedagogical skills.

Systemic structural-functional: to determine the components, their order, internal and external relationships of the formation of professional pedagogical skills and properties in their movement.

Modeling: It was used to reproduce and analyze the links and relationships of the elements that are immersed in the formation of professional pedagogical skills, to construct an objective and dialectical representation of reality.

Empirical level methods

Analysis of documents: professional models, study plans and programs of disciplines and subjects of the Bachelor's Degree in Special Education and Orientation and Mobility, to make inferences about the problem and the proposed objective.

Scientific observation: of teaching activities, both at the university and at the "José Martí" special school, to verify the development of professional pedagogical skills for the orientation and mobility of students with visual disabilities.

Interview: with the course coordinator, main subject teacher, teachers and tutors of the teaching unit to obtain information on the background and evolution of the training of professional pedagogical skills for the orientation and mobility of students with visual disabilities.

Expert consultation method (Delphy): to obtain a theoretical assessment of the developed concept and its possible applicability.

Methodological triangulation technique: to reveal the coincidence or dispersion of the information of the data obtained, necessary for the integration of the results and the determination of regularities.

The indicators evaluated in the proposed empirical methods are the following:

- State of the conception of the professional pedagogical skills that are established in the career.
- Status of the determination of actions and operations for the development of professional pedagogical skills for the orientation and mobility of students with visual disabilities, by academic year.
- State of the art of integrating content into disciplines and subjects for the development of professional teaching skills, for the orientation and mobility of students with visual disabilities.
- State of the art of learning situations for the development of professional pedagogical skills for the orientation and mobility of students with visual disabilities.
- State of development of the professional pedagogical skills established in the career: justify, communicate, direct with help.
- Status of university professor monitoring of the development of professional pedagogical skills in students of the degree, for the orientation and mobility of students with visual disabilities.
- Status of tutor participation in the development of professional pedagogical skills in students of the degree, for the orientation and mobility of students with visual disabilities.

RESULTS

Based on the conceptual study carried out, with the support of the applied theoretical methods, it is considered that the formation of professional pedagogical skills in students of the Bachelor's Degree in Special Education at the University of Pinar del Río "Hermanos Saíz Montes de Oca", for the orientation and mobility of students with visual disabilities, should be understood as the process aimed at the mastery of actions and operations by students. This process should allow students with a visual acuity of less than

0.05 and those with 0.3 up to the perception of light in their best eye, even with optical correction and/or medical-surgical treatment and a visual field of 20°, to establish and update the position they occupy in space and move from one place to another through sensory information.

The integration, through methodological triangulation of the applied methods, allowed us to present a summary of the main regularities obtained.

Main regularities of the formation of professional pedagogical skills for the orientation and mobility of students with visual disabilities

1. There are limitations in the combined methodological preparation of university professors and tutors of the teaching unit.
2. Difficulties are noted in the integration of knowledge from different subjects and disciplines in relation to the formation of professional pedagogical skills, from the organization of the degree, the disciplines and the academic years in relation to professional pedagogical problems.
3. There are limitations in the conception, execution and control of the sequenced activities, from the academic, labor, research and extension aspects, depending on the academic year.
4. Limitations are noted in the conscious work with the actions and operations of the professional pedagogical skills established by the degree and its graduation by academic year, which impacts the formation of professional pedagogical skills for the orientation and mobility of students with visual disabilities.
5. Difficulties are evident in the conception, execution and evaluation of integrative tasks, exercises and exams in relation to the actions and operations of the skills: characterize, model and direct, in students of the career for the orientation

and mobility of students with visual disabilities from the academic, labor, investigative and extensionist perspectives according to the academic year; based on limitations in the interpretation of the clinical diagnosis, as well as its coherent relationship with the pedagogical response.

6. Deficiencies are evident in students of the course in the mastery of the actions and operations of each skill, their sequence and their manifestations (precision, speed and flexibility), both in simulated learning situations and in the teaching unit and before specialists, family members and the community, which includes the National Association of the Blind (ANCI), in Pinar del Río.

The results obtained show limitations in the current conception for the development of professional pedagogical skills in the Bachelor's Degree in Special Education.

Pedagogical concept for the formation of professional pedagogical skills in students of the Bachelor's Degree in Special Education, for the orientation and mobility of students with visual disabilities

The pedagogical concept for the development of professional pedagogical skills in students of the Bachelor's Degree in Special Education, for the orientation and mobility of students with visual disabilities is defined as a set of scientific concepts and ideas implemented systemically through a methodology that is structured in stages, aimed at the mastery of actions and operations by students and that allows students with visual disabilities to establish and update the position they occupy in space and move from one place to another through sensory information.

The objective of the pedagogical concept is aimed at offering a set of scientific concepts and ideas implemented through a methodology that contributes to the formation of professional

pedagogical skills in students of the Bachelor's Degree in Special Education, for the orientation and mobility of students with visual disabilities.

The pedagogical concept is based on Marxist-Leninist theory and is supported by the dialectical-materialist method, which constitutes the fundamental theoretical and methodological basis of the Cuban philosophy of education. The premises of scientific knowledge are assumed from it, which are necessary for the subjects of the training process under investigation, in their interaction with the context, to be able to transform reality and influence their spheres of action.

Therefore, the objectivity of the process in question must agree with the objective nature of the objects, processes and phenomena, so that, in this way, its link with the need-reality contradiction coincides with the transformed reality.

The principle of practice as a criterion for assessing truth is another of the scientific bases of this research. This approach was outlined with a dialectical-materialist approach by Engels and Marx. Based on this analysis, the formation of professional pedagogical skills for the Bachelor's Degree in Special Education is established on the basis of interdisciplinary and intersectoral links with educational institutions, public health and with the support of the ANCI. In this way, an assessment is made of the process and the result according to the academic year and its connection with the orientation and mobility of students with visual disabilities.

The pedagogical concept takes into account the study and characterization of the society in which the individual develops. The theoretical bases are based on the Sociology of Education, which states that education is an organized, highly specialized and professionalized activity that requires well-defined knowledge and skills. In this sense, it is appropriate to consider the guiding-mediating role of the Graduate in Special Education, which contributes to achieving the

development of autonomy and independence of students with visual disabilities, through the development of their orientation and mobility.

The reciprocal interaction between education and society is evident; the need for education to promote accessible contexts that guarantee autonomy, independence and social participation of people with visual disabilities. To do so, an intersectional approach is essential, which calls for agendas, common objectives and articulates disciplines and actors from different sectors in the double function of developing professional pedagogical skills in teachers and contributing to the orientation and mobility of students with visual disabilities.

On its part, Higher Education Pedagogy provides the means for the articulation of agents and agencies that influence the formation and development of professional pedagogical skills. To this end, the link with institutions requires restructuring from praxis, which is why project-based teaching is established as a trend, to which problem-based learning is added.

In view of such goals, Psychology provides, through the historical-cultural school of Vygotsky (1896-1934), a theoretical basis that enables awareness of the actions and operations for the formation of professional pedagogical skills. The student must carry out various actions and operations to achieve an objective. The same skills that constitute structural psychological elements of the personality that are formed, developed and manifested in the activity become its essence.

The student's self-regulation of his or her own development of professional pedagogical skills, based on the planning, execution and control of actions and operations, the motivation for learning and the characteristics of assimilation and internalization, constitutes support for the constant stimulation of metacognition. This makes it possible to constantly improve the process of skill development and the results with greater rates of speed, precision and flexibility.

This support requires a thorough understanding of the biological reality of the visual function of each student, as well as the system of influences and stimulation that he has received for his orientation and mobility, which is inextricably linked to other identity elements of the culture such as: the area of residence, the education of the parents, gender, among other variables. Faced with such complex educational phenomena, the proposed simulation emerges as a method that enables the dynamization of the formation of professional pedagogical skills (interpreting the clinical diagnosis, characterizing, diagnosing psychopedagogically and modeling).

Vygotsky (1896-1934) emphasizes the interrelation between biological and social factors. He considers social factors as determinants, as the source of the development of the person, of the subject, of the individual, while he considers that biological factors are the basis, the premise for this development to occur.

Given the pedagogical nature of the orientation and mobility process, it is essential to interpret the clinical diagnosis offered by medical specialists in its cause-effect relationship. In this way, an adequate educational response in general and teaching-learning of orientation and mobility in particular can be offered, respecting the individuality of each case.

The proposed pedagogical concept is in line with the 2030 agenda, specifically with SDG 4 (United Nations, 2016), the commitments made at the Regional Conference on Higher Education in Latin America and the Caribbean (CRES+5, 2022) and the regulations of the Constitution of the Republic of Cuba (2019) and the laws and agreements that have emanated from it, in favor of people with disabilities. It is one more contribution to the quality of education called for by the International Convention on the Rights of Persons with Disabilities (ICPD), in alliance with the most universal human rights.

The pedagogical conception on which it is based establishes a system of principles derived from the theoretical references of the object of research, its pedagogical nature, the results of the initial diagnosis and the theoretical bases that support it.

Principle of the unity of the scientific and ideological character of the pedagogical process

The pedagogical process must be structured on the basis of the most advanced knowledge of science, in accordance with ideology. It is especially important that the activities carried out promote the development of creative thinking and are directed towards the search for something new, confronting the student with learning situations where he has to use his cognitive and affective resources to find a solution. To do this, the teacher must reveal the unity of the scientific and the ideological, which allows him to analyze and evaluate scientific advances and the situations that occur at a social level, based on the knowledge of his specialty.

In this way, the intersectional criterion taken into account in the conception facilitates the understanding of social reality, as well as its influence on the biological and psychological challenges of visual impairment and allows the student's reflective search, generating critical thinking, autonomy and self-regulation of learning.

Principle of linking education with life, social environment and work

During the training of professional pedagogical skills, experiential learning will be taken into account, linking theory with practice. This will enable the student to awaken curiosity and interest in what he or she does, and to become emotionally involved in learning spaces, which offer various opportunities to share information and experiences between peers and the teacher; they also facilitate the creation of a mentality

about the role that must be exercised in the workplace.

Principle of the collective and individual nature of the education of personality and respect for it

In order to achieve an education based on human rights, promoting social equality while respecting diversity and avoiding discriminatory practices, it is essential to adjust the educational response, taking into account the uniqueness of each student. Therefore, the diagnosis constitutes the starting point; it must be scientific, objective, contextualized and personalized, so that it allows for a psychopedagogical characterization of the educational, family and social context, in order to offer specialized attention, attending to the individuality according to their potential and needs.

Principle of the unity of the instructive, the educational and the developmental

Articulating theory with practice enables students to assimilate and take ownership of their corresponding professional role. In turn, facing learning situations that promote the development of reflective thinking will foster creative and autonomous learning styles that contribute to developing cognitive independence, with the use of the professional pedagogical skills inherent to their profession.

Principle of unity between activity, communication and personality

Communication and activity are an essential combination for the development of personality; man becomes a personality through activity. Skills are formed during academic, work, research and extension activities. When students interact with the object of their profession, in an interrelated and conscious way, based on the formation of professional pedagogical skills, their capacities, individuality and thinking develop; therefore, it is necessary to use methods, forms

of organization and evaluations that stimulate group work and are interesting for their development.

The system of concepts that relates the pedagogical conception includes: the formation of professional pedagogical skills, the specific modes of action of the graduate in Special Education and the orientation and mobility of students with visual disabilities. Other concepts that typify the proposed pedagogical conception are intersectionality, metacognition and simulation.

Set of scientific ideas of the pedagogical conception

Scientific idea 1. The intersectional approach to the development of professional pedagogical skills for the orientation and mobility of students with visual impairments that stimulates metacognition based on interdisciplinary and intersectoral work.

Firstly, it is important to understand the diversity of the students, to whom the training of pedagogical professional skills is proposed, whether for reasons of gender, socioeconomic status, disability, among others; from there, a great variety of needs emerge.

This analysis shows that, in order to achieve integrated educational strategies, inclusive educational and teaching-learning processes, it is necessary to analyze the multi-causality of the manifestations in the students and their families. All of this is determined by the historical-cultural development that has characterized their growth, the confrontation with the cause of their visual disability, the process of stimulation for the development of autonomy and the pedagogical responses in early childhood, for orientation and mobility, among others.

Given this position, it is the scientific idea that ranks the proposed pedagogical conception. It considers how to think about the formation of professional pedagogical skills to achieve self-

management and independence when stimulating students' metacognition; to assimilate, internalize and gain in speed, precision and flexibility the actions and operations that structure the achievement of skills that are proposed for each academic year for the proposed purpose.

Taking into account the above, as a result of the interdisciplinary and intradisciplinary work of the disciplines General Pedagogical Training, Research Teaching Training and Particular Didactics, as well as their corresponding subjects in each academic year, conceptual nodes are established that are introduced, retaken and deepened, which allow an integrated work that unites and contributes to the formation of skills (interpreting the clinical diagnosis, characterizing, diagnosing psychopedagogically, modeling and directing with help) for the orientation and mobility of students with visual disabilities.

Intersectoral relationships are established, given the link between academic disciplines in Special Education, the characteristics of the different causes that generate the different types of visual impairment, their prognosis and needs (Estrada Hernández *et al.*, 2024), as well as the relationship with academic disciplines and educational influence systems. For this purpose, the establishment of agreements and their organization in R&D&I projects is suggested.

The Special Education Bachelor's degree program collective establishes agreements with MINED institutions (the "José Martí" special school, as well as with regular education schools) and MINSAP institutions (the Ophthalmological Center and the Provincial Genetics Center) and coordinates its actions with the projects. Advantages include the formation of the faculty based on the educational reality and the diagnosis of undergraduate students, as well as the planning of agendas according to common objectives.

Research actions are also structured by tasks and research teams, with a leading role for students from one of the lines of the scientific-student group "Con la luz de tu mirada" (With the light of your gaze), as well as extracurricular activities. This enables coherence between the training components and the substantive university processes, in relation to the development of professional pedagogical skills for the orientation and mobility of students with visual disabilities.

In addition, participation and exchange of knowledge with ophthalmologists, genetics specialists, optometrists, special school support teachers, the visual rehabilitation specialist, the Orientation and Mobility teacher and the tutor, as well as members of the ANCI, allows for the progressive planning of the training of professional pedagogical skills in each academic year. As a consequence, guides and activities must be planned that promote how to develop the actions and operations, what aids are required, what is the order, why it is like this, among other ways of metacognitive stimulation.

During the training of professional pedagogical skills, flexible teaching actions are implemented where new learning scenarios are designed that promote the development of reflective thinking. This requires the use of teaching resources that promote learning to learn and teaching tasks focused on the student's autonomous work. During this process, the teacher becomes a guide, encouraging creative and autonomous learning styles that contribute to developing the student's cognitive independence.

Therefore, the planning of learning environments that generate motivation and gradual appropriation of their cognitive processes and the development of teaching activities must be conceived in such a way that the student becomes the active entity of the class, which makes him the protagonist of his own training. In this purpose, Information and Communication Technologies (ICT) play an important role, as does the way in which the virtual classroom of

the MOODLE platform is designed and the creation of media that enable the simulation of increasingly comprehensive learning situations from an intersectional perspective.

It is important to take into account the particularities of Study Plan E, specifically the stages of the continuing education system: undergraduate, preparation for employment, improvement and postgraduate; which requires the coordinated and intentional work of the major group with the teaching units, to establish a scientific-methodological preparation system. This complements the formation of professional pedagogical skills, in correspondence with the functions that it performs and of the educational institution, whether special or regular education.

Graduates are also required, as part of their continuing education, to participate in a leading role in specialized activities related to visual impairment, as well as to update themselves based on changes and transformations in the educational level. One way to achieve this is through ongoing training and improvement, through participation in courses, diplomas, postgraduate specialization, master's degrees and doctorates.

Therefore, it is necessary for the management of educational institutions and the tutor to stimulate permanent self-management actions of information, knowledge and research, through specialized bibliography, films, searches in computer networks, study of results of school management; all of which will guarantee the systemic character of continuing education and its practical-experiential perspective, in correspondence with social demands.

Scientific idea 2. Gradation of the training of professional pedagogical skills for the orientation and mobility of students with visual disabilities. Interpreting the clinical diagnosis, characterizing, diagnosing psychopedagogically and modeling, through the coordinated work of the University with the teaching unit and the ANCI.

Professional pedagogical skills, actions and operations for the orientation and mobility of students with visual disabilities will be taken into account.

In order to achieve these objectives, it is the responsibility of the group of each academic year to organize and execute, together with the teachers and tutors, the actions and operations to be carried out by the disciplines and subjects, taking into account the development of skills in each of them; in addition to specifying the articulation with the preceding and succeeding year to establish the process of exercising the newly formed skills in adequate quantity and frequency, so that they become easier to reproduce and errors are eliminated. All this guarantees speed and precision.

Academic years must take into account that the exercise of skills needs to be sufficient, diversified, which leads to the realization of varied exercises to avoid mechanism, formalism and response by association.

It is important for the year group to take into account that students will take control of actions and operations in an increasingly perfect and rational manner, with the help of the means they have and their previous experience, in such a way that this control has an impact on the results of the activity.

Scientific idea 3. The development of professional pedagogical skills for the orientation and mobility of students with visual disabilities must include the solution of simulated learning situations and the systemic output in the substantive university processes.

The development of the professional pedagogical skills proposed for orientation and mobility requires the articulation of the main integrative discipline of Investigative Labor Training with the rest of the disciplines, taking into account the particularities of this in the training of professionals through the link between the

university and the teaching units as training scenarios.

The inclusion of students in R&D&I projects allows for the proposal of a possible solution to the problems existing in special schools and regular schools with creativity, related to the orientation and mobility of students with visual disabilities in diverse contexts.

Therefore, it is important that students acquire practice in training, recognizing and handling situations that they will experience in their profession. By implementing simulation, the teacher promotes innovative education, moving from a traditional methodology to a constructive one. The use of simulators facilitates access to information in an interactive way and helps the student improve their communication processes. The experience through simulation encourages the student to gain confidence and self-assurance in their professional performance.

The use of the project-based learning method, case studies and simulation as methods that activate self-management of learning and the autonomy required by the E study plan allow the development of professional pedagogical skills and encourage the search for solutions; all from the use of techniques and procedures that allow the study of educational reality and the proposal of solution paths that allow offering proposals for transforming educational reality.

For the development of professional pedagogical skills, the use of the case study method is significant, as it allows the systematization of the actions and operations of the skills: interpreting the clinical diagnosis, characterizing, diagnosing psychopedagogically and modeling.

The above, together with the use of simulation, allows the representation of real work environments, the preparation of the student in professional practice, as well as promoting skills so that they can make diagrams, videos, demonstrations, among others. All of the above, with the aim of reinforcing the construction of

significant knowledge in the student that allows directing the educational process and, in particular, the teaching-learning process of the orientation and mobility subject and its relationship with the corrective and/or compensatory process.

It is suggested to use audiovisual media with topics such as: the physiological mechanism of vision, the simulation of acuity and visual field in people with low vision, the use of real case protocols, the procedures to teach orientation and mobility techniques, in correspondence with the actions and operations of the skills declared in each academic year with the accompaniment of the specialists of the special school and the ANCI, with the purpose of corroborating the objectivity of the simulation and the results obtained.

Methodology for implementing scientific ideas for the formation of professional pedagogical skills in students of the Bachelor's Degree in Special Education for the orientation and mobility of students with visual disabilities

Goals

- To establish an intersectional approach to the development of professional pedagogical skills for the orientation and mobility of students with visual impairments, stimulating metacognition through interdisciplinary and intersectoral work.
- Explain the gradation of the training of professional pedagogical skills for the orientation and mobility of students with visual disabilities: interpret the clinical diagnosis, characterize, diagnose psychopedagogically and model, through the coordinated work of the University with the teaching unit and the ANCI.
- To use the project-based learning method, case studies and simulation in the training of professional pedagogical skills for the orientation and mobility of

students with visual disabilities, from the systemic exit in the substantive university processes.

- Systematize the development of professional pedagogical skills through academic, work, research and extension activities.

The following are proposed stages: orientation and motivation, assimilation, mastery, systematization and evaluation of professional pedagogical skills. These stages are interrelated, occur in ascending order, and show qualitative changes in students progressively; in addition, they lead to the emergence of new qualities. Their organization, execution and constant monitoring will depend on the work of the career group and fundamentally on the academic years.

Recommendations

They are addressed to the group of major and academic years for the implementation of the proposed pedagogical concept.

For the career collective:

- Update agreements with teaching units (Special School, regular education centers, Ophthalmology Center, Genetics and ANCI).
- Analyze the problem bank of the teaching units (educational institutions) with which it has an agreement.
- Include the sectors involved in providing care to students with visual disabilities (MINED, MINSAP) in the department's research projects (UDDIS).
- Conduct a methodological workshop to discuss the theoretical and methodological foundations of the development of professional pedagogical skills from an intersectional perspective.
- Establish the points of intersection of the contents of the scientific disciplines that are necessary for the academic disciplines in the major.

- To prepare the group for each academic year together with the specialists from the "José Martí" special school, in the conception of the professional pedagogical skills in each of them.
- Determine the role played by each discipline and academic year in the conception of professional pedagogical skills, in order to identify the conceptual nodes that are introduced, retaken and reaffirmed in each of them.
- Promote intradisciplinary and interdisciplinary work and its contribution to the gradual development of the professional teaching skills of the course in each academic year.

For the academic year collective:

- Update the educational strategy with the output of the actions and operations of each of the proposed skills in correspondence with the substantive processes of the university.
- Methodological workshop for the presentation of the grading of skills for each academic year.
- Determine the role played by each discipline and subject in the conception of professional pedagogical skills to identify the conceptual nodes that are introduced, retaken and reaffirmed in each of them.
- To promote the integration of subject content and its contribution to the development of proposed pedagogical professional skills, through the discipline of Research Teaching Practice Training.
- Establish the points of intersection of the contents of the scientific disciplines that are necessary for the academic disciplines in each year and intersectoral participation through project work.

The methodology contains examples for each academic year, which illustrate the formation of the proposed pedagogical professional skills and their ascending gradation. Given the importance of assuming "interpreting clinical diagnosis" as a

skill, it will be illustrated with the first academic year.

In the first year of the Bachelor's Degree in Special Education, emphasis will be placed on developing the skills to interpret clinical diagnoses and characterize them.

As part of the practical familiarization subject, students will be made aware of students with special educational needs associated with a visual disability. To do so, it is proposed to watch a video that shows the different stages of the development of these students, the methods and means used in the educational process in general and teaching-learning in particular, as well as the necessary participation of the family, the school and the community in their social integration, taking into account their needs and potential, as well as the intersectoral link that favors preventive, corrective and/or compensatory and developmental work with them.

It is also suggested to hold discussions about films and relevant personalities with visual disabilities, which will increase the student's overall general culture. Likewise, a visit to the "José Martí" special school should be made to encourage exchanges with directors, teachers, specialists, students in training from other academic years and students with visual disabilities, to encourage a first approach to one of their spheres of action.

This first approach will allow them to become familiar with the specialty and will show them the diversity they will find in the classrooms, from an intersectional approach, for which they will be prepared during their training as Special Education professionals; so that they can address individual differences in the inclusive contexts in which they will have the opportunity to interact.

The above can be confirmed during visits suggested by the subject of the curriculum Introduction to Early Childhood Education, which proposes a tour of the teaching units that care

for children in early childhood and preschool with their forms of care, the regular school and the institutions served by Special Education.

On its part, the subject Anatomy and Physiology of Development I, by teaching the contents of the visual system and its relationship with the central nervous system, will provide the biological elements that typify and characterize students with visual disabilities, highlighting the value that the rest of the analyzers have for communication, learning and the autonomy and independence that facilitate the accessibility of these students to any context.

Firstly, this subject focuses on the possible causes of visual impairment, its clinical manifestations, prognosis, guidelines for its prevention, and the support and stimulation that children need during their development to be on par with their age group.

Protocols will also be offered that show the ophthalmological diagnosis to train and develop the ability to interpret the clinical diagnosis, as a starting point for the characterization of these students and their necessary articulation with the pedagogical procedures.

To understand the reality of these students, it is suggested to view audiovisuals that, based on simulation, help the student understand the mechanism of vision and how eye pathologies can affect their learning, orientation and mobility, accessibility and communication with the environment around them. As well as the use of simulation glasses for understanding the terms: acuity, visual field, low vision and blind.

Visits to Genetics and the Ophthalmology Center of our province will be encouraged, so that in the exchange with specialists in the area of Medical Sciences the contents received can be further explored. It is an opportune moment to update the prevalence of the causes that generate visual disability, with emphasis on curious cases due to their low national and international prevalence. In this way, the necessary intersectoral

relationship is established in the detection, monitoring and rehabilitation of these students, with the accompaniment of families, members of the ANCI and their communities.

Through research and the use of the project-based work method, collaborative group work is proposed to delve deeper into the ophthalmological diseases of the Pinar del Río reality; all of this will encourage the search and consultation of scientific articles and websites of the National Organization of the Blind in Spain (ONCE) to contribute to self-learning, investigative curiosity, motivation, which contributes to the development of proposed skills. This will put them in a position to be able to carry out referential and extracurricular work that can be enriched with the scientific results of the province, to respond to their needs from educational, family and community contexts.

For the evaluation of the subject covered in this course, protocols are proposed as other simulated learning activities that can be used during the year. With the characteristic that these will only refer to the ophthalmological diagnosis, so that students can interpret it, taking into account the actions and operations proposed in said skill.

This academic year, the Pedagogy subject will offer essential elements for school, family and community characterization that will be used in the formation and development of the ability to characterize. Its implementation from the first year is necessary, since it provides the elements that characterize the student, emphasizing their causes, time of appearance, potentialities and needs, not only individually but also in their family, educational and community context.

All of the above will be reinforced in the subject Psychology I, which takes up and deepens the conceptual nodes discussed previously and introduces others that are necessary for students to carry out the psychopedagogical characterization and its corresponding educational care strategy, taking into account

the clinical diagnosis, the suggestions of specialists in Medical Sciences and the special school, as well as the varied characteristics of the family, school and community context.

In order to assess the pedagogical professional skills proposed for this year, it is suggested that an integrative exercise be carried out that links the content of the subjects with the participation of the specialists and tutors of the special school.

The proposed result conceives the formation of the professional pedagogical skills of the students of the Bachelor's Degree in Special Education at the University of Pinar del Río "Hermanos Saíz Montes de Oca", for the orientation and mobility of students with visual disabilities, in the concretion of the academic years, with the necessary guidance of teachers and tutors and the improvement of the process, taking into account intersectionality, metacognition, simulation, interdisciplinarity and intersectorality from the academic, labor, research and extension activity; in close connection with educational practice.

The consultation carried out with experts, through the Delphy method, revealed that the methodology is an expression of the pedagogical conception, as well as the relevance of the scientific ideas that are developed and the possibility of implementing the proposed methodology in the Bachelor's Degree in Special Education at the University of Pinar del Río.

DISCUSSION

The research focuses on the formation of professional pedagogical skills of students of the Bachelor's degree in Special Education during their undergraduate training. In the opinion of Rojas Rodríguez (2022, p. 195), this stage "ensures in-depth training in the basic and specific aspects of each profession, and allows the graduate to provide answers to the most general and frequent problems that arise in the

basic link of the profession". However, it does not deny the possibility of continuing the development of specific skills for orientation and mobility for students with visual disabilities, in work entities, as part of the work of the recent graduate in academic training or improvement.

The research consulted shows a growing concern related to professional pedagogical skills. Granados Guerra (2023) agrees that:

The articulation that the process of professional pedagogical training in Cuban Higher Education must make with the quality processes that are developed in the educational system for which the education professional is trained, with the expressions that are achieved, is indisputable. The views that are made in this sense, should not overlook the place of the development of professional pedagogical skills, considering that these are derived from the professional problems that exist in the professional pedagogical performance (p. 7).

The proposed concept considers the need for training in work entities, in the exercise of practice, which allows them to enrich and understand professional pedagogical problems and the ways to offer solutions to them. Hence the importance of the relationship between academic, research and extension work, linked to comprehensive care in schools where there are students with visual disabilities.

Among the new aspects proposed, with the aim of enriching the current conception, is intersectionality. Intersectionality, seen as an approach, impacts the university curriculum by "guaranteeing the democratization of knowledge, respecting diversity, through the construction of environments that respond to the diversity of subjects" (Logroño *et al.*, 2018, p. 34).

The position defended promotes intersectionality from the perspective of interpretive action,

which provides accurate knowledge of the interaction between the causes of vulnerability (La Barbera, 2019; Garrido Gómez, 2022). In the proposed pedagogical conception, intersectionality has its methodological response in the integration of the interdisciplinary and intersectoral relationship of undergraduate training in different contexts, whether at the university, in work entities or in communities, with the presence of people with visual disabilities.

Another distinctive element is the explicit intention to stimulate metacognition in students in the formation of the specific pedagogical professional skills that are proposed. In this regard, authors such as Senra Pérez *et al.* (2023) highlight the role of constructivism and the historical-cultural approach and state that "metacognition is essential in lifelong learning, for this reason its stimulation in teaching activities must become a structuring axis of the process" (p. 79).

As part of their undergraduate training, a professional with a Bachelor's degree in Special Education must fundamentally develop professional pedagogical skills: to justify, communicate and direct; however, these are not sufficient for their professional performance, given the uniqueness of providing comprehensive care to students with visual disabilities, specifically to promote their orientation and mobility.

Among the necessary skills, the interpretation of clinical diagnosis is evident, a novel aspect in the proposed pedagogical concept. In this regard, Hernández-Estrada *et al.* (2024) state:

Understanding the clinical and functional diagnosis of people with visual disabilities is an essential aspect for establishing interdisciplinary work in the care of these students according to their uniqueness. This establishes the necessary conditions for developing an efficient comprehensive rehabilitation program for blind people

and those diagnosed with low vision, which contributes to improving their quality of life (p. 3).

The development of professional pedagogical skills requires teamwork between all those involved in the ongoing training process. The results in practice will depend on the systematicity, intention and updating of the new cases with visual disabilities that are part of the educational network. The above requires the leading participation of teachers and students, but also involves tutors, specialists, MINSAP and ANCI personnel to train a Special Education teacher capable of facing the new challenges of the educational reality, for an inclusive and sustainable development.

BIBLIOGRAPHIC REFERENCES

Conferencia de seguimiento a la III Conferencia Regional de Educación Superior de América Latina y el Caribe CRES+5. (2024). Brasilia, Brasil, 13-15 de marzo de 2024.

García-Gutiérrez, A., Medina-Carballosa, E., & Mastrapa-García, R. (2022). Formación de la competencia psicopedagógica de profesionales para el desarrollo social. *Revista Mexicana de Investigación e Intervención Educativa*, 1(1), 53-60. <https://pablolatapisarre.edu.mx/revista/index.php/rmiie/article/view/7>

Garrido Gómez, M. I. (2022). Vulnerabilidad, Grupos Vulnerables e Interseccionalidad. *Revista Internacional De Pensamiento Político*, 17(1), 307-322. <https://doi.org/10.46661/revintpensampolit.7544>

Granados Guerra, L. A. (2023). El Desarrollo de Habilidades Profesionales Pedagógicas

- para el Perfeccionamiento del Desempeño Profesional Pedagógico del Maestro. *Órbita Científica*, 29 (125), 1-8. <https://revistas.ucpejv.edu.cu/index.php/rOrb/article/view/2296>
- Hernández-Estrada L, Vázquez-Campos J, González-Reyes S, Quinzan-King A, García-Cejas I. (2024). Caracterización de los educandos con discapacidad visual atendidos en la Escuela Especial "José Martí" de Pinar del Río. *Rev Ciencias Médicas*, 28, 1-10. <http://revcmpinar.sld.cu/index.php/publicaciones/article/view/6250>
- Logroño, M. J., Borja-Naranjo, G., y Orozco-Ocaña, C. P. (2018). Visión crítica del currículo desde el enfoque de género e interseccionalidad: Caso de la Universidad Central del Ecuador. *Revista entorno*, 66: 237-255 <http://hdl.handle.net/11298/908>
- Martínez Cepena, M. C., Anglada Díaz, L.C., Calzadilla Pérez, O. O. (2021). La integración del conocimiento neurocientífico bajo la mirada de la educación inclusiva. *Luz. Año XX*. (3), 65-79. <https://luz.uho.edu.cu/index.php/luz/article/view/1125>
- Naciones Unidas. (2016). La Agenda 2030 y los Objetivos de Desarrollo Sostenible: una oportunidad para América Latina y el Caribe. Objetivos, metas e indicadores mundiales. <https://repositorio.cepal.org/bitstream/handle/11362/40155/20>
- Rojas Rodríguez, Y. (2022). La formación continua y la superación profesional del Licenciado en enfermería. Retos y desafíos. *Revista Metropolitana de Ciencias Aplicadas*, 5(3), 19. <https://www.redalyc.org/pdf/7217/721778120023.pdf>
- Senra Pérez, N. de la C., & López Rodríguez del Rey, M. M. (2023). Sistematización de teorías y tecnologías psicopedagógicas de metacognición en el proceso de enseñanza-aprendizaje: claves para la práctica. *Ciencia y Sociedad*, 48(2), 65-82. <https://doi.org/10.22206/cys.2023.v48i2.pp65-82>

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<https://mendive.upr.edu.cu/index.php/MendiveUPR/article/view/3973>



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