ISSN. 1815-7696 RNPS 2057 -- MENDIVE Vol. 19 Number 1 (January-march)
Orama Sánchez, Y., Pulido Díaz, A., Mena Lorenzo, J.A. "The process of formation of scientific-investigative skills in the Social Work specialty. Characterization".
p. 51-66
Available from: http://mendive.upr.edu.cu/index.php/MendiveUPR/article/view/2099
2021

MENDIVE
REVISTA DE EDUCACIÓN

Translated from the original in Spanish

The process of formation of scientific-investigative skills in the Social Work specialty. Characterization

El proceso de formación de las habilidades científico-investigativas en la especialidad Trabajo Social. Caracterización

O processo de formação de competências de investigação científica na especialidade Trabalho Social. Caracterização

Yaima Orama Sánchez[1]
http://orcid.org/0000-0003-4955-1666
Arturo Pulido Díaz[2]
http://orcid.org/0000-0002-8694-9836
Juan Alberto Mena Lorenzo[2]
http://orcid.org/0000-0003-3695-9451

[1] "Rigoberto Fuentes Pérez" Polytechnic Center. Pinar del Río. Cuba.
yaima.oramas@upr.edu.cu
[2] University of Pinar del Río 'Hermanos Saiz Montes de Oca". Cuba.
arturo.pulido@upr.edu.cu; juan.mena@upr.edu.cu

Received: July 30th, 2020.
Approved: December 17th, 2020.

ABSTRACT
The article addressed a topic of special importance for Technical and Professional Education, related to the training of scientific-investigative skills in the technician of the Social Work specialty. The essential objective was aimed at characterizing the process of scientific investigative skills training in students of the technical specialty in Social Work at the Rigoberto Fuentes Pérez in Pinar del Río Polytechnic Center. The research was explanatory with a retrospective ex post facto design and assumed an integral or dialectical approach. For the characterization, a group of empirical methods were used (study of documents, semi-structured interviews with teachers, observation of teaching activities and survey of students) that allowed obtaining the necessary information to give an answer to the problem posed in the referred school. The instruments were performed in a sequential manner, which allowed for multiple triangulations of sequential data. The results obtained allow appreciating inadequacies in the formation of the scientific-investigative abilities in the students of the specialty technician in Social Work, overalls in the integral conception of the process, due in a fundamental way for the lack of preparation of the educational ones and the insufficient methodological work integrated among all the subjects of the academic year.

Key words: scientific-investigative skills; social work; technical in the specialty social work.

RESUMEN
En el artículo se abordó una temática de especial importancia para la Educación Técnica y Profesional, relacionada con la formación de las habilidades científico-investigativas en el técnico medio de la especialidad Trabajo Social. El objetivo esencial estuvo dirigido a caracterizar el proceso de formación de las habilidades científico-investigativas en los

estudiantes de la especialidad técnico medio en Trabajo Social del Centro Politécnico "Rigoberto Fuentes Pérez" de Pinar del Río. La investigación tuvo carácter explicativo con un diseño ex post facto retrospectivo y asumió un enfoque integral o dialéctico. Para la caracterización fueron utilizados un grupo de métodos empíricos (estudio de documentos, entrevistas semiestructuradas a profesores, observación a actividades docentes y encuesta a estudiantes) que permitieron obtener la información necesaria para dar una respuesta al problema planteado en la escuela referida. La selección de los instrumentos se realizó de manera secuenciada, lo que permitió realizar una triangulación múltiple de datos secuenciales. Los resultados obtenidos permiten apreciar insuficiencias en la formación de las habilidades científico-investigativas en los estudiantes de la especialidad técnico medio en Trabajo Social, sobre todo en la concepción integral del proceso, debido de manera fundamental a la falta de preparación de los docentes y el insuficiente trabajo metodológico integrado entre todas las asignaturas del año académico.

Palabras clave: habilidades científico-investigativas; trabajo social; técnico medio en la especialidad trabajo social.

RESUMO
No artigo tratou se de um tema de especial importância para a Educação Técnica e Profissional, relacionado com a formação de competências de investigação científica no técnico de nível médio da especialidade de Trabalho Social. O objetivo essencial foi orientado para caracterizar o processo de formação das competências de investigação científica nos estudantes da especialidade técnica média em Serviço Social do Centro Politécnico "Rigoberto Fuentes Pérez" de Pinar del Río. A investigação teve um carácter explicativo com um desenho ex post facto retrospectivo e assumiu uma abordagem integral ou dialética. Para a caracterização, foi utilizado um grupo de métodos empíricos (estudo de documentos, entrevistas semiestruturadas a professores, observação de atividades de ensino e inquérito a estudantes) que permitiram obter as informações necessárias para dar uma resposta ao problema colocado na referida escola. A seleção dos instrumentos foi efetuada de forma sequencial, o que permitiu realizar uma triangulação múltipla de dados sequenciais. Os resultados obtidos permitem-nos apreciar as insuficiências na formação de competências de investigação científica nos alunos da especialidade técnica intermédia em Serviço Social, especialmente na concepção integral do processo, fundamentalmente devido à falta de preparação dos professores e ao insuficiente trabalho metodológico integrado entre todas as disciplinas do ano académico.

Palavras-chave: competências de investigação científica; trabalho social; técnico intermédio na especialidade do trabalho social.

INTRODUCTION

The challenges that world socio-economic and technological development imposes on middle-level professionals are increasing significantly. Today workers with greater integrity are needed, capable of identifying, facing and solving the problems and situations that characterize the object of their profession, characterized by permanent change; This requires new qualities to their professional training, which in its demands once changes in training systems for work (Mena and Mena, 2020).

In accordance with these requirements, Cuba advocates an educational model for the training of competent professionals, capable of solving the most common problems and situations of each profession, becoming active transformers of social reality. This aspiration is synthesized in the commission or mission assigned by the Cuban State to the Ministry of Education (MINED) and in a particular way to Technical and Professional Education (ETP), responsible for "Directing the initial and continuous training of the workforce qualified as a medium level, as well as training the population, through the integration of an educational institution-labor entity, as a dynamic element of the economic and social development of the country" (Ministry of Education, 2016a, p.22) .

This social assignment to the ETP also affects those areas that represent new professional profiles; including technicians in the specialty Social Work, which encloses fundamentally those subject areas related with the inherent content to social problems and/or human of social character.

For Falla (2014), the Social Work profession should focus on promoting equity and social, political and economic justice through knowledge and research framed in specific historical-cultural contexts. In this regard, the aforementioned author recognizes social work as a discipline that involves high rigor in addressing its object, and having a theoretic base of scientific knowledge that give specificity as a profession. It is from this scientific knowledge, as Blanco, Sanchez and Tallón (2018) believe once the magnitude identified, characteristics and consequences of social needs and problems, where proposals and solutions that contribute to its will provide attenuation and transformation of the structures and social discourses that generate them. In essence, social work constantly assumes new scenarios, exercises, appointments and tasks; it is the profession within the social sciences that has made the greatest progress and involvement in relation to community care and social security programs.

In this context, it is the profession with broader social practice performance, been related with the complex relationships between human beings and the social context in which they live, in need of a thorough study. It articulates itself to the recognition of human dignity, from the conviction that all people fully develop their potential, improve their quality of life on preventing and / or solving those more significant social problems, taking as an essential principle the recognition of human rights, the universal values of coexistence and justice as equity (Falla, 2014).

Particularly in Cuba, immersed in building a project that puts the human being as central and essential component, that requires professionals, of mid- level, who work in this complex area, influenced by the dynamics of social change and, largely, by the heterogeneity of the interpretation of the facts and phenomena; In this sense, the specialty takes a role of broad relevance.

The conception of the curriculum of the technical specialty in Social Work emphasizes a professional training that enables this specialist:

> To act as a promoter, mobilize mediator, facilitator and coordinator of actions that contributes to the solution of social problems in their area of insertion. For this, they must have a general training that allows them to adapt to the conditions of the environment of action (MINED, 2016b, p.2).

In this task, the action research is an indispensable resource for generating projects for human and social development, monitoring processes to produce them and understand its impact by understanding human interactions and explanation of social processes. Thus, during its performance, the professional of middle level should be involved in research activities facilitating intervention and solution, applying the research method of social problems.

Achieving this purpose implies the incorporation of new practices to the profile of these professionals, which is why the training, as part of their profile, of a group of skills related to the search, updating and permanent processing of the technological scientific information is highly significant. (Mena and Mena, 2020). Therefore, a technician in the appropriate Social Work specialty of new research-related knowledge and skills is required.

Take this approach means recognizing the social worker not only since its intervention in the conflict and solution of social problems, but as a professional that, to meet, explain these problems and identify causes that originates them (problematization) uses existing knowledge (theorization), produces and reproduces new knowledge emerging and enriched from the social reality representing the environment in which he works (check), using it as a manifestation of the scientific method.

These elements of instrumental knowledge, practically heritage of top-level professionals, are part of the necessary scientific-investigative skills, required as part of comprehensiveness, which must have the technical midlevel in Social Work.

Thus, the scientific-investigative skills are of great importance in shaping the professional profile of the technician in the specialty Social Work. Farías, Veiga and Elverdin (2016) consider that the role of these skills, although not new, has changed with the development and evolution of the specialty, while for many years the technical-operational dimension was prioritized; thereby causing, in time to be considered an important content to social practice, has already been treated as separated from it.

As a result, during treatment to social problems it is required that research and intervention kept in constant contact and interaction, reaching character of interdependence. Thus, the social worker must rethink his action and performance profile in order to take into account, in addition to elements of a profession linked to intervention, a broader spectrum, with emphasis on investigative processes, which allows him to advance towards disciplinary configuration and construction (Blanco, Sánchez and Tallón, 2018).

The scientific-investigative skills in vocational training related to the social worker have been studied by a large group of specialists in recent years Falla, (2014); Martinez and Márquez, (2014); Estrada Gonzalez, Chavez Quintero and Ramirez, (2016); Chirino, Vázquez, Canto, Escalona and Suárez, (2016); Farías et al., (2016); Esteban and Del Olmo, (2016); Muñoz, Hernández and Véliz, (2017); Ramón, Lalangui, Guachichullca, and Espinoza, (2019); Blanco, Sánchez and Tallón (2018); Ravelo, Bonilla, Martell and Toledo, (2019); Viteri Briones et al., (2020), among others. All consider its importance to achieve the integrity and skills of this professional.

The criteria of these researchers can be synthesized from the consideration that scientific-investigative skills represent a set of mastered knowledge, of diverse nature, which begins to develop before the individual has access to

systematic training processes for the investigation. Most of these skills are developed not only to enable the realization of the tasks of the research; however, they have been detected by trainers as skills (as discussed below) whose development in the future professional is basic and is a major contribution to enhance that they can make good quality research.

As a regularity, these researchers agree, scientific-investigative skills allow the subject to efficiently carry out an investigative activity related to the profession, discovering problems, describing, interpreting, explaining, evaluating, predicting and transforming the object under investigation. From which it can be inferred that, both in social work and in the training of this worker, scientific-investigative skills become part of the professional content.

Being consistent with all of the above, the need to enhance the scientific-investigative skills training process of students of the technical specialty in Social Work at ETP becomes a challenge; Professionals who are capable of investigating the problems of society in general and of labor institutions are required, looking for their causes and providing solutions to the shortcomings they present, to contribute to the solution of specific theoretical and practical problems, essentially starting from their training at school.

However, in the pedagogical practice of the ETP, related to this specialty, which is studied only at the "Rigoberto Fuentes Perez" Polytechnic Center (CP), there are shortcomings. An adequate knowledge of the elements that characterize the process of formation of scientific-investigative skills of students of the Social Work specialty is required. In relation to this, the article proposes as a general objective to characterize the process of formation of scientific investigative skills in students of the technical specialty in Social Work of the "Rigoberto Fuentes Pérez" Polytechnic Center of Pinar del Río.

MATERIALS AND METHODS

The investigation was carried out at the "Rigoberto Fuentes Pérez" CP in Pinar del Río. The study has an explanatory character with a design *ex post facto* retrospective, whose data were obtained through the study of documents, semi-structured interviews to teachers of the CP and specialist instructors business entities in which students perform the procedures for practical teaching, observation of teaching activities and student surveys. The captured data were analyzed after both so quantitatively and qualitatively, following the dialectical approach.

The selection of instruments was done so consecutively, which allowed a *multiple triangulation sequential data* related to the formation of scientific and research skills in student of Social work specialty. The process began with the study of normative documents of the career to know how training is approached and development of scientific- investigative skills from the regulatory point of view: Study plans, methodological indications, programs and preparation of the subjects and training guides for work practices.

Then the semi structured interview was applied to teachers of the polytechnic center and specialist instructors' specialty, to determine the weight and output or skills in study through teaching activities and subject content.

Nine (9) professors from the polytechnic center who taught the basic and specific subjects of the profession were interviewed: Elements of Cuban Economy; Fundamentals of Social Communication; Introduction to Social Work; Theoretical Foundations for Social Work; Methodology of Social Work; Social Policies and Social Services; Prevention, Assistance and Social Security in Cuba; Legislation and Social Work; Ethical Foundations for Social Work; Information Management; Human development; Cross-cutting Approaches; Elements of the Cuban Political System; Foundations of Social Psychology and Integrative Task. It was taken into account that there are five (5) teachers who teach more than one subject. In addition, the interview was applied to five (5) specialist instructors who work in adjoining classrooms and during work practice in labor entities.

The type of semi-structured interview applied allowed researchers, from a basic script of 12 questions, to add other elements in order to deepen, clarify, organize or synthesize the thoughts of the interviewees.

With this information, an observation was made of 14 twelve-year activities carried out, both in the polytechnic center (9) and in the labor entities (5). The purpose of the observation was to contrast the information obtained from the interview with teachers and to identify the causes that may be causing the results obtained.

Finally, all the students were surveyed in order to find out to what extent they consider having scientific-research preparation that allows them to carry out activities related to the profession.

The survey was applied to 24 students from 3 rd year, intentionally selected because it is in this year in which contents are summarized related with scientific- investigatory skills training, which is being addressed from the previous year.

From the exposed script, the information search and processing strategy was developed, which allowed or characterize the situation of the scientific-investigative skills training process. The questions of the instruments were subjected to an initial pilot which facilitated its final development, ensuring the text comprehension. The main indicators addressed were the following:

- Importance given in the normative documents to the scientific-investigative skills of the average technician in the Social Work specialty.

- Presence of the contents on scientific research in the subjects.

- Exit to scientific - investigative skills through the contents of the subjects.

- Interdisciplinary methodological work related to the scientific-investigative skills of the subjects of the year of study.

- Identification and working with professional problems in the training of scientific and research skills.

- Students' mastery of scientific-investigative skills.

RESULTS

The analysis of the content of the study plan of the technician specialty in Social Work (MINED, 2016b, Ministerial Resolution 282, Annex 4), reveals important information about the object being studied, among which the following stand out:

- The social worker's work object, among other knowledge necessary for the performance of their work, includes the design of intervention projects.

- Its field of action is aimed at contributing to the solution of social problems based on the available resources and established policies.

- The tasks and occupations to be developed by this professional include acting as a mediating agent for the prevention and transformation of social problems and their causes, which includes carrying out characterizations and diagnoses of subjects and the community; the design, proposal and implementation of actions aimed at the prevention and transformation of social problems and the causes that generate them; the proposal of social transformation projects, oriented to local development, as well as participation in the research activities required for their professional performance.

Likewise, among the skills to be trained are: applying methods and techniques for the identification, diagnosis, description, assessment and interpretation of social problems (second year) and using different ways to search for passive information available in the community (third year).

As can it be seen, in the professional content to be learned by students of the specialty, there is a high component related to scientific research. It can be inferred that the average technician in the specialty Social Work largely is a social researcher who must contribute to solving social problems affecting the positive transformation of society

However, in either group of subjects to receive students during their initial vocational training: general and specific basic training, basic vocational training and vocational training, there are some directed specifically to this science. The main general professional problems by years, related to the specialty are not identified.

The existence of methodological indications referring to the formation of scientific-investigative skills in students, through the different subjects, could not be verified; there is not any related to interdisciplinary methodological work between the academic year subjects based on the skills under study.

Only in the subjects Fundamentals of Social Psychology, Fundamentals of Social Communication and Introduction to Social Work, some contents related to scientific-investigative activity appear. The most widely used elements of knowledge are those related to the socio metric method and other techniques for group research , to diagnose socio-psychological phenomena present in social groups; community diagnosis and its application principles and techniques for its study; the characterization of social problems in Cuba and the identification of their causes, as well as the characterization of the methodology of social research, its importance and specificities of social work.

Sime teacher, 77, 7 % (7), interviewed do not have pedagogical training, being specialists of the companies that provide the courses at the polytechnic center. It was also taken into account that some teachers (5) teach up to two subjects.

According to 66.6% (6) of teachers, training of the scientific - investigative skills must be addressed in the course Task Integrator, what you can see who is unaware of the responsibility the rest of the subjects has. None of the teachers can refer in a coherent and comprehensive manner to the problems leading professional specialty. While these problems are not particularized in the Study Plan or the year, neither there are not strategies aimed at

identification from the reality of the specialty in the territory, indicating a divorce or contradiction between the logic of the science with which the contents are approached and the logic of the profession with which it should be approached.

Specialists of labor organizations interviewed insist on the weaknesses of nursing students regarding ability is related to the problematization, characterization, justification and verification of the facts, objects or phenomena of reality, It implies to dedicate time to their training and development in order to face and solve the social problems of the practice.

Finally, all of the surveyed students consider that research is not important as part of their professional performance; they do not generally see it as part of their future in the Social Work specialty. The surveyed students declare the little intentionality with which these skills are addressed in all subjects, confirming that, although even in these it is not done with the required depth; it is only in a few subjects in which teachers refer to the skills studied. Consequently, the students express their disagreements due to the insufficient scientific-investigative skills they possess to develop the project conceived in the Integrative Task and those they have when they arrive at work practices in the production and service entities.

The result of the analysis carried out shows the existing inefficiencies in the formation of scientific-investigative skills in students of the medium technical specialty in Social Work. Shortcomings in the comprehensive conception of the process, caused among other factors by the lack of preparation of teachers, as well as insufficient methodological work integrated among all subjects of the academic year are presented.

The didactic conception of the teaching-learning process, characterized by the non-identification of the professional problems of the specialty and the little intentionality of the work for the formation of scientific-investigative skills, causes insufficient technical and professional development of the students of this specialty in the CP " Rigoberto Fuentes Pérez" .

DISCUSSION

Social Work, in its historical construction, has been solidly establishing itself as a discipline that is part of the Social Sciences; in keeping with this, its object of study is enriched. However, it has been limited by an insufficient scientific vision of its practice and the influence of a fragmentary vision of social reality, pragmatism and the restricted use of research to carry out social diagnoses (Falla, 2014).

The results obtained in the investigation that led to the present article, largely match the above criteria. The problems in the training of mid - level professionals, from inadequate screening of el-research scientific component, show that this maintains a trend toward professionalization and intervention, limiting l to production of knowledge s scientists wh o still not has reversed enough. Consequently, the educational process professional yet not taxed to the formation of l research component that prepares students for o ne future performance in professional practice, allowing thus its impact on the production of new knowledge, in turn, supports a better understanding and intervention of social reality and its problems.

As a result of insufficiencies in the - science research component , theoretical studies on certain areas that require addressing civil engineering from a broad and profound vision of social reality, lack objectivity. This reflected that students learn with insufficiencies to perform diagnostics and characterizations of the problems, subjects and communitarian context in general; which in turn implies absence or insufficiencies in the design, proposal and implementation of social transformation projects whose actions are taxed in two fundamental directions of science:

- the objective orientation to the prevention and transformation of social problems and the causes that generate them.

- the foundation and theoretical explanation of these transformations and the causes that provoke them as contributions that serve as a basis for the solution of future social problems.

On the other hand, the lack of systematization of the results, when they are obtained, leads to insufficient analysis and reflection in and from the activity that, in the cognitive order, contributes to base, give theoretical and didactic- methodological coherence to the process of vocational training.

However, despite the fact that its empiricist nature has limited the possibility of producing knowledge in its disciplinary development, it is indisputable that Social Work is gaining more importance as a discipline of Social Sciences (Esteban and Del Olmo, 2016).

For Blanco, Sánchez and Tallón (2018), the very practical origin of Social Work as a profession prints a certain conflictive relationship between theory and practice. For these authors, Social Work was born, fundamentally, to solve the problems of practice, directly interrelated with social implications; for this reason its incidence is seen mostly from a corrective function that has not affected enough in the need for deepen in a scientific way in the social shortcomings on which it is usually involved.

The conception of the process of ETP specialty Social Work must take into account that research from and on social intervention enables the identification and the diagnosis appropriate to the needs; it also enables an approach to the origin of these needs (Blanco, Sánchez and Tallón, 2018). Assuming this criterion means the need to project the professional pedagogical process from the identification and confrontation of those most common professional problems (diagnosis of needs); this element, in turn, gives it an indisputable investigative character, both to the profession and to its training process.

It agrees with Farías and others (2016) that it is necessary to take into account, when conceiving the teaching of research, that most of the students of the specialty do not have a preconceived, as part of their professional projection, to dedicate themselves to the social sciences investigation. Although the conception of the Study Plan calls for research training, it still underlies in the students that this task is secondary to professional intervention, which generates resistance during the development of the Integrative Task when learning to develop the research project.

In relation to the research object, there are groups of elements that deserve attention. One of them is the preparation of teachers. Teacher training to acquire these professionals in their undergraduate training prescribe the investigative function as one of the as essential tasks to any teacher. Possessing pedagogical training, therefore, implies, although

it is not a condition, having a minimum training as a researcher.

The teacher must be a researcher by nature (Chirino and others, 2016; Carbonero, Raya, Caparrós and Gimeno, 2016; Ravelo and others, 2019; Mena and Mena, 2020; Viteri Briones and others, 2020). This means, among other possibilities, providing students with tools for solving problems through research. For this, in addition to being a researcher, you need to have pedagogical tools to teach research, transmit and discuss with students about the production of knowledge and social research practices (Ravelo and others, 2019).

The very direction of the teaching-learning process of the subjects they teach is full of actions related to the updated diagnosis of the conditions and needs to ensure that the students take ownership of the content. It requires the search, reading, comprehension, processing and preparation of the basic information in each teaching activity, whether of a theoretical or practical nature.

On the other hand, the need for the teacher, regardless of the subject, to establish the proper relationship between the logic of science that represents the basis of his subject and the logic of the profession represented in the real problems of the profession , forces him to investigate and have students do it too (Mena & Mena, 2020). However, as evidenced by the characterization carried out, on many occasions this process does not have the necessary intention based on the formation of scientific-investigative skills.

In such a way that a teacher , prepared as such, can turn the pedagogical process into a permanent investigative activity where systematic reflection in action becomes a potential for the formation of scientific-investigative skills.

These types of skills, also identified as investigative skills, have been defined by various specialists. However, its essence is associated with the development of skills aimed at the act of conducting scientific research, corresponding to the stages of the scientific method.

For Martínez and Márquez (2014), scientific-investigative skills represent:

> The domain of actions (psychic and practical) that allow the rational regulation of the activity, with the help of the knowledge and habits that the subject possesses to go in search of the problem and the solution of this by way of scientific research (p .22).

Similarly, Estrada Molina and others (2016) conceive these skills as:

> Mastery of theoretical and practical actions that allow the rational regulation of activity in the search, determination and solution of a scientific problem through scientific research, as well as in the introduction and generalization of the results in practice (p. 54).

These skills are mobilized during the investigative process in order to discover, describe, interpret, explain and assess a reality, predicting its future development depending on whether it is intervened or not. Scientific-investigative skills allow the professional to efficiently carry out a specific investigative activity, hence the importance of their training

from the initial professional pedagogical process.

Meanwhile, Chirino and others (2016) defines as "the domain of the generalizing actions of the scientific method that empower the individual for problematization, theorizing and testing their professional reality, contributing to its transformation on a scientific basis" (p.92).

The previous authors, somewhat agree that the research and teaching needs of a group of abilities that specify a single trade, the pedagogical and the research. These skills, seen as invariants actions of scientific-investigative skills, acquire basic character and must be dominated first by teachers of all subjects (Chirino and others, 2016); among the most important are:

-*The problematization of the educational reality.* Associated with professional reality and understood as the perception of essential contradictions in the context of professional performance through the comparison of reality, it constitutes the object of the profession with the scientific knowledge and ethical-professional values that the subject represented in the object of science has that the subject means, which leads to the identification of professional problems. Problematize means a group of operations such as: observation, description, comparison, identification of contradictions and approach to scientific problems.

-*Theorization of educational reality.* It represents the search, application and socialization of essential scientific knowledge to interpret and explain reality, as well as to assume personal scientific and ethical positions that allow it to project them in an enriched way. It involves a group of operations such as: the analysis and synthesis of texts and data, determination of indicators, approach to hypothetical thinking, comparison with scientific criteria, assessment of theoretical and practical elements, foundation with scientific criteria, drawing of conclusions, modeling of solutions science and writing scientific ideas .

-*The reality check.* It corresponds to the permanent verification of the process and the results of the application of proposals that constitute scientific alternative solutions to the problems of reality, which allows evaluating their achievements and difficulties from scientific and ethical positions. It involves a group of operations such as selection of methods and research development, application of instruments, tabulation of information, processing and interpretation of information, comparison of the results obtained with the stated objective and evaluation of the information.

The above criteria are specified in three essential ideas related to scientific-investigative skills:

- represent a domain of actions to define the skills that could be considered as invariants of the investigative activity.

- represent a domain of the content of the teaching of research or what would be the same, of their system of knowledge, habits, values and attitudes.

- represent a generalization of the method of science.

Another element that deserves attention in relation to the studied object, representing a symbol numbers that make up the curriculum.

As it could be seen in the results of the characterization in the curriculum of technical school specializing in Social Work does not appear oriented subjects directly working with the Methodology of

Social Research; which it does not mean that you cannot teach students to investigate, complicates the work of teachers, while strong interdisciplinary methodological work that the formation which intent scientific-investigative skills, is required.

Teachers, mostly, do not make conscious the transversal nature of the formation of this skills in all academic years and in all subjects (general and basic, specific professional basic professional and), attributing this important work to the subject Integrative Task. These shortcomings somehow seem to be influencing not the potential of the different contents advantage to give treatment to the aforementioned training.

One of the strengths of the teacher mastering the investigative function lies in the possibility of consciously mobilizing these knowledge and skills during the development of the contents of their subject. For this, he needs sufficient knowledge about the characteristics required of the average technician, established in the professional model (Mena and Mena, 2020).

Knowing the model makes it easy for you to:

- The understanding of the contribution of its science to the professional training.

- The understanding of how and what his participation in the integrative task that the students will develop throughout the training cycle would be.

- The use of the potential of the content to give way to the formation of scientific and investigative skills.

Fundamentally, mastering the third of them gives the teacher the possibility of articulating theoretical expositions (foundations from science) on a topic (such as problems, objectives, professional content), with examples of concrete experiences on social work that could guide the learning of students of the academic year to solve the problem in integrating task.

The review of the Study Plan for the Social Work specialty allowed us to see how the contents related to the formation of scientific-investigative skills are located within the content of several subjects, during most of the curriculum, mainly in the 2nd and 3rd year. Likewise, professional training aimed at the comprehensive technical and professional development of the student is guided by the research project to be developed by the students as part of the integrative task (MINED, 2016b).

Achieve efficiently with the stated objective, requires of a integrated and interdisciplinary methodological work that in the year of study achieve the confluence of educational influences of all teachers, not just those directly responsible of the Integrative Task.

That is, the necessary orientations, corrections and reorientations to the students to progress in the work with the research project, depend on all the teachers in general and on each one of them in particular. So that the research project aimed at solving a specialty problem is built throughout the initial training with the assistance of all teachers. Having mastery of the investigative function, in addition to teaching students to problematize, theorize and check on the object investigated, allows teachers to give opinions, suggest, give guidance, etc. , about the formulation of the problem , the approach of the tasks or objectives, the theoretical foundation and the solution proposal.

In correspondence with the above, the formation and development of scientific - investigative skills in students of the Social Work specialty is considered as an uninterrupted succession of stages for the appropriation, mediated by teachers, of the generalizing actions of the scientific method that they empower the individual for the problematization, theorization and verification of their professional reality, based on the correct orientation of a system of interdisciplinary activities with a systemic and contextualized nature, which allow them to solve the social problems identified in the community and work entities where they are inserted , based on the resources available and the policies established.

In this way, all the teachers of the academic year contribute to the formation of the scientific - investigative skills of the students, achieving as a result and in correspondence with the professional model that the technicians in training learn to:

- Theoretically substantiate, from the historical-social perspective, their research results.

- Apply methods and techniques for the identification, diagnosis, description, assessment and interpretation of social problems.

- Use different ways to search for passive information available in the community, among other elements.

Teaching to research implies forming and developing in student's ways of thinking and communicating ideas about a social phenomenon, based on social reality.

Finally, the characterization of the process of formation of scientific-research skills performed in the process of ETP in the technical specialty in Social Work studied in CP "Rigoberto Fuentes Pérez", once contrasted with the theoretical foundations, threw a group of shortcomings. Its essential features are related to an insufficient projection of the scientific-research component, which tends towards professionalization and intervention, limiting the necessary production of scientific knowledge. Likewise, the pedagogical process does not contribute enough to the formation of the investigative component that adequately prepares students. This insufficiency has a negative effect on the understanding and objective intervention on social reality and its problems. As a result, students learn with disabilities to problematize reality, make diagnoses, characterizations, and explanations about social problems, about subjects and about the community context in general.

All this is reflected in weaknesses in design, proposal and implementation of projects of social transformation that as part of the process of ETP, ascribe to the objective orientation of prevention and transformation of social problems and underlying causes as well as the foundation and theoretical explanation of these transformations.

BIBLIOGRAPHIC REFERENCES

Blanco, M., Sánchez, E. y Tallón, E. (2018). La inserción laboral y la satisfacción de los egresados del Grado en la Facultad de Trabajo Social de la Universidad Complutense de Madrid. *Cuadernos de Trabajo Social, 32*(2), 329-340. Recuperado a partir de https://doi.org/10.5209/cuts.6079.

Carbonero Muñoz, D., Raya Díez, E., Caparrós Civera, N., y Gimeno Monterde, C. (2016). *Respuestas*

transdisciplinares en una sociedad global: aportaciones desde el Trabajo Social. España: Universidad de La Rioja. Recuperado a partir de https://dialnet.unirioja.es/servlet/libro?codigo=656364

Chirino, M. V., Vázquez, J. P., Canto, C. del, Escalona, E., y Suárez, C. (2016). *Concepción teórico metodológica de la introducción de resultados científicos en educación. La sistematización como vía para aportar recomendaciones a directivos e investigadores*. La Habana: Pueblo y Educación.

Esteban Carbonell, E., y Del Olmo Vicén, N. (2016). Reflexiones sobre la investigación en Trabajo Social: aportaciones desde la sistematización de la práctica. Universidad de Zaragoza. Recuperado a partir de https://dialnet.unirioja.es/servlet/articulo?codigo=5608457.

Estrada Molina, O., González Espino, Y., Chávez Rodríguez, J. A., Quintero Ortiz, L. M., y Ramírez Gutiérrez, Y. (2016). La formación de habilidades investigativas y las exigencias de la industria del software. *Mikarimin. Revista Científica Multidisciplinaria, 2*(2), 53-68. Disponible en: http://45.238.216.13/ojs/index.php/mikarimin/article/view/294 *e-ISSN 2528-7842*

Falla Ramírez, U. (2014). *La investigación en el trabajo social contemporáneo*. Colombia: Universidad Colegio mayor de Cundinamarca.

Farías, M. L., Veiga, S., y Elverdin, F. (2016). La enseñanza de investigación en Trabajo Social. Tensiones y desafíos. En *V Encuentro Latinoamericano de Metodología de las Ciencias Sociales*. Mendoza, Argentina: FAHCE: Universidad Nacional de la Plata. Recuperado a partir de http://www.memoria.fahce.unlp.edu.ar/trab_eventos/ev.8428/ev.8428.pdf

Martínez Rodríguez, D., & Márquez Delgado, D. (2014). Relación entre habilidades investigativas y formación profesional. *Mendive. Revista de Educación, 12*(4), 505-511. Recuperado de http://mendive.upr.edu.cu/index.php/MendiveUPR/article/view/744

Mena, J. A., y Mena, J. L. (2020). *La educación superior cubana desde un enfoque de formación profesional compartida Universidad-institución productiva*. La Habana: Editorial Universitaria. Recuperado a partir de http://eduniv.reduniv.edu.cu/

Ministerio de Educación. (2016b). Resolución Ministerial 282: planes de estudio para la formación de técnicos medios en las especialidades de Hilandería, Tejeduría Plana, Poligrafía y Trabajo Social. UEB Impresiones Gráficas.

Ministerio de Educación. (2016a). XII Seminario Nacional para Educadores. UEB Impresiones Gráficas.

Muñoz Arce, G., Hernández Mary, N. y Véliz Bustamante, C. (2017). La relación entre investigación e intervención social: Voces desde el trabajo social chileno. *Trabajo social global - Global Social Work. Revista de investigaciones en intervención social*, *7*(12), 3-24. https://digibug.ugr.es/handle/10481/47008

Ramón Pineda, M.Á., Lalangui Pereira, J.H., Guachichullca Ordóñez, L.A., & Espinoza Freire, E.E. (2019). Competencias específicas del profesional de trabajo social en el contexto educativo ecuatoriano. *Conrado*, *15*(66), 219-229. Epub 02 de marzo de 2019. Recuperado en 04 de febrero de 2021, de http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1990-86442019000100219&lng=es&tlng=es

Ravelo Peña, M., Bonilla Vichot, I. d. la C., Martell Socarras, M. y Toledo González, M. (2019). La formación y desarrollo de la competencia investigativa, una experiencia en Pinar del Río. *Mendive. Revista de Educación*, *17*(1), 54-68. Recuperado de http://mendive.upr.edu.cu/index.php/MendiveUPR/article/view/1463/1262

Viteri Briones, T., Cañizare Stay, A., Sarmiento Torres, I., Mendoza Avilés, H., Granados Romero, J. y Briones Kusactay, V. (2020). Desarrollo de habilidades investigativas en la formación profesional de la Universidad de Guayaquil. *Revista Conrado*, *16*(72), 74-82. Recuperado de https://conrado.ucf.edu.cu/index.php/conrado/article/view/1217

Conflict of interest:

Authors declare not to have any conflicts of interest.

Authors´ Contribution:

*Yaima Orama Sánchez:*Conception of the idea (60%), authorship coordinator (60%), general advice on the topic addressed (20%), literature search and review (60%), preparation of instruments (50%), application of instruments (100%), compilation of the information resulting from the applied instruments (100%), statistical analysis (60%), preparation of the database (50%), Drafting of the original (first version) (90%), revision and final version of the article (20%), correction of the article (20%), revision of the applied bibliographic norm (50%).

Arturo Pulido Díaz: Conception of the idea (20%), authorship coordinator (15%), general advice on the topic addressed (40%), literature search and review (20%), translation of terms or information obtained (100%), preparation of instruments (30%), statistical analysis (10%), preparation of database (20%), Writing of the original (first version) (5%), review and final version of the article (40%), correction of the article (40%), revision of the applied bibliographic norm (20%).

Juan Alberto Mena Lorenzo: Conception of the idea (20%), authorship coordinator (15%), general advice on the topic addressed (40%), literature search and review (20%), preparation of instruments (20%), statistical analysis (30%), preparation of the database (30%), Drafting of the original (first version) (5%), revision and final version of the article (40%), correction of the article (40%), revision of the bibliographic norm applied (20%).