Socio-Formative Didactic Strategies to Strengthen Social Skills in Medical Technology University Students, 2021

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Abstract

The results of the investigation were aligned with the objective of determining the influence of the program in the strengthening of social skills in university students of Medical Technology of the National University of Jaén. It is an applied, explanatory, longitudinal research, with a quantitative approach and quasi-experimental design, with pre-test and post-test in experimental and control groups. The hypothetical-deductive method was used, with a population of 289 students and 80 for the sample. The Observation Form and the Social Skills Evaluation Scale were used. The results showed a good to excellent level of social skills in all the participants of the experimental group of the II and VI cycle. The means per academic cycle increased by 32 and 35.75 respectively. By dimensions according to academic cycle, the first social skills increased by 6.2 and 5.4, advanced social skills by 5.05 and 4.85, skills related to feelings by 5.45 and 5.1, alternative social skills to aggression by 3.95 and 6.7, social skills to cope with stress by 7.4 and 8.45, and finally social planning skills by 3.95 and 5.25 respectively. In conclusion, the program has a significant influence on strengthening social skills in university students, with a greater influence in the experimental group of the VI cycle (35.75 percentage points).

Keywords: Educational program; Educational Strategies; Social Skills.

1. Introduction

The United Nations Organization (UNESCO) in the Declaration of Incheón, sets out the vision towards 2030, of a transformative, comprehensive, ambitious and demanding education, framed in Sustainable Development Goal 4, on guaranteeing an education that complies with being inclusive, equitable, of quality, in addition to promoting the learning opportunity for all. (, p.7) UNESCO, 2016 The importance and relevance of an education that involves developing social skills as an essential part for the performance of work functions, and the development in the different scenarios of life, is validated.

At the national level, the importance of generating the development of social skills to face the challenges of daily life has also been highlighted. In this sense, it showed that developing social skills at a good level facilitates satisfactory work performance. He stated that university education is in charge of maximizing the student's potential and qualities. (p. 22). Similarly, they identified poorly developed social skills in university students, manifested in difficulty in expressing emotions, ideas, opinions, in facing adverse events, in accepting compliments, in interacting with others, in starting and maintaining a conversation, fear of authority, feelings of inferiority, fear of rejection, problems in understanding the other, they are prone to persuasion, complacent, seek acceptance from others, afraid to initiate new interpersonal relationships and do not demonstrate the ability to work in a team. (p. 189)   Arévalo-Ipanaqué (2017)   Javier et al. (2019)

It is stated that one of the ways to evidence the deficient management of social skills results in the treatment provided to the user within the different health services. In this sense, the Ministry of Health (MINSA) in 2011, proposed prioritizing the warm treatment of the patient, improving communication, generating efficiency to offer dignified and quality care in public hospitals. (RPP Noticias, 2011)

Likewise, for professional, social and even personal development, it is required to demonstrate the management of social skills, which can be made viable with the application of socio-formative didactic strategies focused on integral development from university education. The application of socio-formative didactic strategies represents an important change for teaching practice, which must be in accordance with the challenge of transforming actions, attitudes and even behaviors that generate the achievement of learning towards the solution of problems present in the context, and that by being linked to the perspective of the socio-formative approach promotes change towards the knowledge society   (Guevara et al., 2020, p. 1).

Therefore, in the university context, emphasis should be placed on improving social skills considering their six dimensions, in the absence of a good to excellent level of them; even more so, if they have an impact on human talent. It was observed that the lowest development was pointed out in dimension 1, first social skills, mainly in aspects such as starting and maintaining a conversation spontaneously; to present themselves to others; introduce others; and to make a compliment or compliment.

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It is essential to strengthen social skills of the generic and specific competencies described within the graduation profile, being clear that they make up the four knowledges, specifically knowing how to be and live together. Therefore, the social skills addressed from the socio-formative approach contribute to potentiate the ethical life project to make it materialize in actions in a comprehensive way and strengthen the ability to identify, understand and manage with self-knowledge, self-regulation, empathy, self-motivation, ability to face life events, assume decision-making and strengthen resilience actions.   (Magdaleno-Arreola, 2018, pp.2-3)

In this sense, the central problem of the research arises from the difficulties in demonstrating social skills presented by students of Medical Technology, highlighting deficiencies in the different dimensions. This led to the formulation of the following question: What is the influence of a program of socio-formative didactic strategies to strengthen social skills in students of the II and VI cycle of the Professional Career in Medical Technology with a Specialty in Clinical Laboratory and Pathological Anatomy of the National University of Jaén, 2021? For this purpose, the research determines the implications between the study variables: Program of socio-formative didactic strategies (VI), social skills (VD).

The general objective was to determine the influence of a program of socio-formative didactic strategies to strengthen social skills in the participating experiment group, under a quasi-experimental design with pre-test and post-test.

 The research is in harmony with the improvement of educational quality from a study focused on the influence of the Program of socio-formative didactic strategies in the strengthening of social skills in students of II and VI cycle of the Professional Career of Medical Technology with a Specialty in Clinical Laboratory and Pathological Anatomy of the National University of Jaén, 2021.

2. Theoretical reference

Within the framework of research, studies such as those of , have been highlighted, which pointed out that students graduate with little consistency in the development of life skills necessary at a professional and personal level. They showed that the development of life skills has great potential to improve self-image and overall quality of life. (pp. 5-68), and   McGrath and Adler (2022)   Salazar-Botello et al. (2020) showed that with increasing age, social skills improve, with greater expression of social skills in university students who are in the last year of training. They concluded that the university is important for the development of social skills and that it is imperative to include it in the curriculum. (pp. 2-10)

   Carrillo (2020) , established that the development of socio-emotional skills is the current imperative at the academic level, being a major challenge to intervene in educational processes with methodologies that lead to developing the ability to face uncertainty, reassessing and resignifying emotional intelligence, socio-emotional skills and the capacity for resilience to guarantee in addition to training in cognitive aspects, a training with respect for integrality. (pp. 65-73)

Padilla et al. (2019) , emphasized that the conceptual theoretical activity and experiential practice concretizes the training process of social skills taking into account particularities such as age, the historical and cultural situation of the person and the professional profile of the career. (pp. 71-74), found that the improvement of students with deficiencies in certain social skills is generated by the application of a Rivera et al. (2019) training program to develop social skills in university students, demonstrating that social skills can be taught. (pp. 1-15)

Marrero Sánchez et al. (2018) , raised the importance of knowledge together with the improvement of the set of skills such as persistence, self-control, curiosity, awareness, determination and self-confidence. (pp. 1-17). Fonseca-Pedrero et al. (2017) , agreed on the relevance of acquiring and enhancing emotional skills to improve the quality of life and promote the integral development of the person. (pp. 1-11). Vásquez (2019) , found that after the application of the program and due to its effects, significant development was recorded in the average level of social skills of the participating university students. (pp. 1, 90). , showed that, at the end of the program, the experimental group with better social skills stood out, and consequently with better prosocial behaviors. (pp. 123-129). Huambachano and Huaire (2018)

2.1. Learning and education in a context of uncertainty

The drastic change in education in the world reached modifications in the usual educational process. He emphasized what he called the silent crisis of education, highlighting impacts on personal, labor, social and economic aspects that involved the actors of the educational process. An event also evidenced in the university environment, which changed face-to-face for distance education to make this educational process viable. In this sense, he argued that educational processes had to be adapted to respond to a "new normal", which involves the student community and teachers, who experienced the adaptation of the way of learning and teaching, rediscovered skills and abilities to maintain educational practice, which in the face of the new reality, with a learning process focused on virtual spaces, Technological resources are the ideal option to continue the training process. (p. 67) Di Gropello (2020) León (2020)

The situation experienced led to the implementation of strategies to continue with education at different levels, making the importance of context in education remarkable. Regarding the above, the theory of so-called sociocultural theory, reveals the important influence of the sociocultural environment on learning, denoting main mechanisms such as language and the zone of proximal development (ZPD), which alludes to what is known and what can be learned through the accompaniment and support of the teacher, through the awakening of the interest and motivation of the student. With this, the consolidation of learning by interacting with people in different environments was highlighted, focusing on real and congruent sociocultural learning for the acquisition of knowledge, with the development of social skills to face life situations and provide correct responses. Vygotsky (1978)

Equally important, Bruner (1987) he points out that the teacher plays the role of facilitator, and even more so that of an assertive companion in the construction of knowledge, which motivates both individual and team learning, based on the solution of problems taken from the reality of the students and that generally have to be solved with group participation. (pp.75). In this theory, the role of the facilitator promotes crucial aspects in the participant, such as observation,

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comparison, inquiry and permanent analysis, throughout the educational process, developing an active, critical and constructive role in the formation of knowledge (Piñate et al., 2021, pp.75-76).

In addition, complexity theory stands out in great importance. , explained that complex thinking by joining concepts that reject each other and that are broken down to be cataloged in closed compartments (p. 84), is articulating thoughts that separate and reduce together with thoughts that distinguish and link, denoting as a thought that relates without privileging or categorizing (, p. 43). In this line, this theory characterizes the plurality and diversity of points of view considering the genetic, intellectual, psychological, cultural and affective difference of the human being. An open conception of the subject-object relationship conceives learning as an individual and collective experience shared, modified and improved in a systematic way Morin (1998) Morin, 1999 (Hernández and Aguilar, 2008). In this mention, complex thinking addresses the following general principles: systemic, recursive, reintroduction of the one who knows in all knowledge, hologrammatical and dialogical pp. 45-57) (Luengo González, 2016,

Socio-education emerges as an alternative approach aimed at pedagogical innovation, which in the words of Socio-Education reflects the humanistic spirit of education making use of complex thinking as epistemology, giving the human being the main role in addressing real problems extracted from their social context, where information technology plays a pertinent role and is in line with current progress. (p. 59) Thus, this theoretical approach is aimed at contributing to a favorable change in the way of life, promoting action and integral development giving priority to sustainable development from a holistic perception and vision of complex thinking Ambrosio and Hernández (2018) (Vázquez et al., 2017).

In this approach, socio-training focuses on an education using real problems to generate solutions relevant to the context, betting on a more innovative comprehensive education.

2.2. Education, culture, curriculum and competency-based training

Education approached from Morin's approach is to put into practice the necessary means to strengthen the formation and development of the human being, he discerned from teaching, pointing out that teaching is the art or action of transmitting knowledge seeking to be understood and assimilated p.10). In this, the transmission of culture is framed, which is necessary to understand our condition as human beings and help us to live, p.11). Therefore, the link between education and culture is adduced, visualizing an education with great possibilities for change at the cultural level, which includes the way of thinking, acting and/or behaving in the social context. (Morin, 1998, (Morin, 1998

In this sense, the curriculum as a set of experiences of the student, who is a participant in actions typical of reality where his integral development as a person, professional and member of a society is dynamized, with fundamental roles that he plays in any educational system. It is understood that the curriculum reflects the educational conception in terms of individuality, society and culture, with the planning and execution of the same, the achievement of the type of man and society that is demanded of the educational system is strengthened. (Campos, 2016, p.17)

Taking into account that, in the professional profile, as a result of the educational process, what education really achieves in each individual is considered, the real progress of the learner with respect to the intention of education is visualized. Therefore, it is necessary to highlight the importance of the curriculum involved in a conception of integral formation, (Campos, 2016, p.21) where education aimed at forming man in an integral way is visualized.

With regard to the above, he explained that education must enable the development of capacities, making students establish adequate relationships with the social environment, incorporating the culture of their time and their locality, moving towards a conception of the curriculum on an integral level that must be coherent with a comprehensive education. It reiterates that education and curriculum must be related in a coherent manner (as cited in Peñaloza (2003) Peñaloza, 2005, Campos, 2016; p.21).

The University as an institution is in charge of disseminating, constructing and controlling cultural content. It performs an educational function by generating social links with the State, business and other institutions of civil society, an aspect to be considered in the construction of the curriculum. In the same way, the University, which has a training action, must be aligned with the training of professionals with the capacity to perform satisfactorily in the work context and be entities that generate beneficial transformation of society. (Peñaloza, 2005)

Competence refers to knowing how to do in an ideal or expert way, uniting internal aspects of the human being. In turn, they define competence from the ability to act effectively in the face of a particular event, a capacity that makes use of and associates various resources, one of them knowledge. (p.9) Perrenoud and Lorca (2008)

Moreover, the dizzying change in the workplace has directed the gaze towards real skills, particularly characterized, evolved over time and according to context. In this context, universities are involved in competency-based training, although the emphasis given to erudite, theoretical, and methodological knowledge is still visible. In this regard, competencies represent first-order challenges in university education, given the need to respond to social demands aimed at the dynamics of the labor market. (Perrenoud & Lorca, 2008, pp.16-17)

2.3. Socio-formative didactic strategies in the university educational model

Socio-training includes competencies, which are defined by , as Tobón (2013) integral performances of action aimed at the identification, interpretation, argumentation and resolution of problems in the different contexts of life, in such a way, that they contribute to building and transforming reality, they are integrative of knowing how to be and coexist with knowing and knowing how to do. (pp. 11-13) defines didactic strategies under the socio-formative approach as a set of planned actions (p.28). Following this line, they pointed out that socio-training proposes the following didactic strategies: Training projects, conceptual cartography, socio-formative UVE, Kolb's method, case analysis for contextualized problems, the MADFA strategy, synergistic collaborative work; of which, the socioformative UVE, the Kolb method and collaborative work will be used for the purposes of this study. (p. 43) Tobón (2013a) Parra et al. (2015)

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On the other hand, he defines didactic strategy as the planning of the teaching, learning process, and that includes conscious as well as reflective decisions of the teacher in relation to the techniques and activities to be used to achieve the goals set out in the course; which are actually the learning objectives. (pp. 4-5). They pointed out that people confront situations and develop skills through multiple competencies that are strengthened with projects based on reality. (pp. 70) At the same time, they support the idea, pointing out that through these qualities solutions are sought in a creative way that can be supported by other disciplines. (p. 53) ITEMS (2006) Paredes et al. (2013) Parra et al. (2015)

Tobón (2013b) , indicates that " socio-training as a new educational approach seeks to educate people based on collaborative work, based on a solid ethical life project and with the necessary skills to face challenges in the personal, social, community, environmental, scientific, disciplinary, recreational and cultural context". (p. 58). Making clear how crucial it is to train professionals under a holistic, humanizing vision, with commitment to the institution, where the educational process is in continuous improvement and the competencies are perfectable.

Meanwhile, the educational model of the National University of Jaén, with a competency-based approach, focuses on the student, to address the demands and needs of the context. In this mention, the Professional Career of Medical Technology of the National University of Jaén, has the responsibility of training professionals in a comprehensive way, highlighting humanistic and ethical aspects, solid knowledge, high technical quality, with management skills, social responsibility, entrepreneurship, adaptability, cultural diversity, effective communication capacity and commitment to the development of the country. However, in the university reality, complying with the principles of the competency-based approach has turned out to be challenging, as weaknesses have been identified in its application such as time limitation, weak specialized accompaniment, difficulties in the articulation of competencies of the different subjects, and addressing competencies as mere tasks of the environment without humanizing characteristics.

2.4. Phases and didactic sequence of the PEDS to strengthen social skills
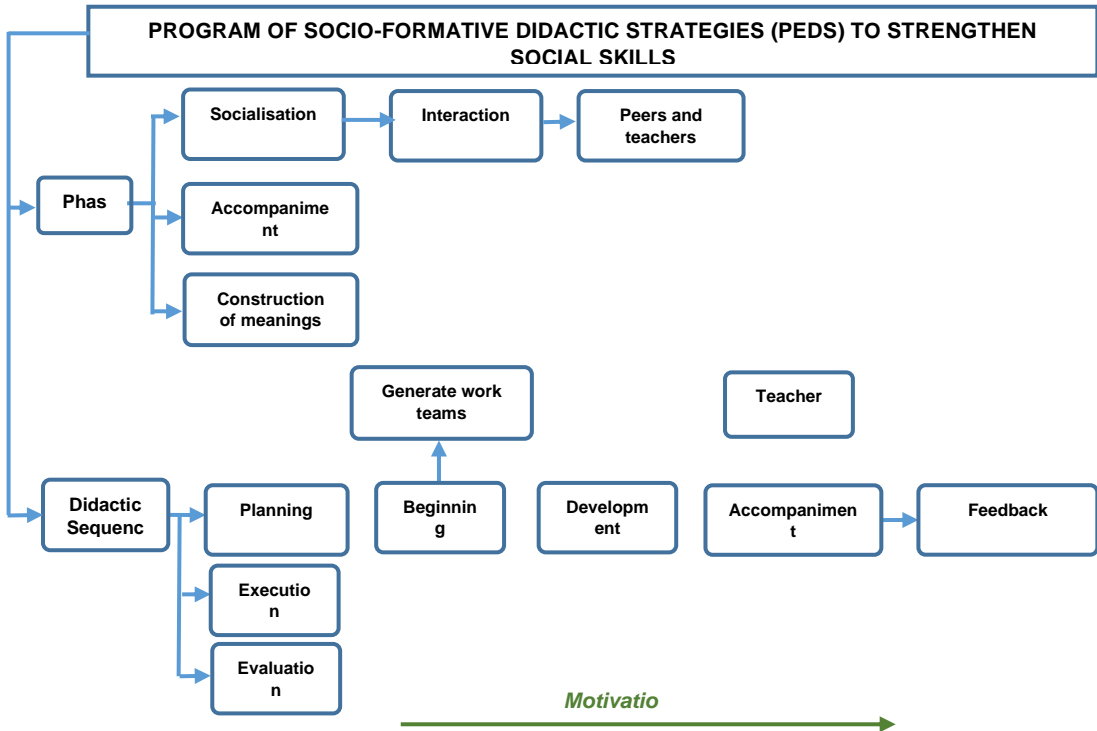

Figure 1. Phases and didactic sequence applied to the program of socio-formative didactic strategies.

2.5. Didactics, curriculum and professional profile of the Medical Technology student

Didactics in higher education is a dynamic aspect, a generator of professional empowerment. As a science, its object of study is the educational teaching process, considering that the teacher must assume a fundamental role aimed at the management of didactic processes under a changing context where he or she has the responsibility to respond to their demands, being important to assume leadership and protagonism in the change of the social scenario from the school environment and basically from the classroom process. For this reason, didactics goes to the rhythm of changes in the context to achieve relevance in the teaching-learning process.   (Llatas, 2021)

Regarding the aforementioned, he emphasized the formal object of didactics, emphasizing that its purpose is to produce intellectual formation and integral formation of the human being. (pp.34-38)   Díaz (2003)

Regarding the professional profile of the Medical Technologist in Clinical Laboratory and Pathological Anatomy, described in the 2019 Curricular Plan, it specifies three aspects:

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Scientific, technological and humanistic. The scientific aspect focused on knowing and understanding the biological, biochemical and biophysical foundations of the human being, with analytical and synthesis capacity. In the technological aspect, knowledge of advances is involved, which must be used and applied appropriately to comply with what is requested by the health system, and the development of skills, abilities and attitudes typical of the Medical Technology activity. The humanistic is aligned with the ability to be aware of the social and cultural environment, to know the needs, interests and expectations of the group to which it belongs, under ethics and deontology, fostering and promoting the approach to the community through actions of university social responsibility, aimed at achieving the fundamental educational purpose and understanding of its own culture; generating integration of the individual into his or her social environment.   (National University of Jaén, 2019)

2.6. Neuroscience, social skills and learning in the educational context

The brain in its functioning has been studied by neuroscience, which generates knowledge that contributes to neuroeducation focused on enhancing the teaching-learning process. Likewise, neuroscience supported by sociocultural and learning theory, contributes to the strengthening of attention and the practice of skills and knowledge. In this aspect, neuroscience confirms that achieving significant learning results from reading, discussing, executing real situations or close to the reality of what is to be taught, linked to what is known and a positive emotion, which is strengthened in systematic practice and learning with peers, because this climate of joyful and playful learning activates dopamine, serotonin and oxytocin that improve the learning capacity, highlighting the continuous practice, but as a varied, interesting and challenging experience that manages to consolidate neural networks, with positive emotions for a more grounded learning. (Ortega, 2020, pp. 5-6)

The know-how of professionals, mainly health professionals, expresses the development of social skills for humanized care. Therefore, social skills are closely related to emotional intelligence as a type of social intelligence that includes the ability to supervise, understand one's own emotions, those of others, differentiate them and use affective information as a guide for thought and actions. (p. 189)   Salovey and Mayer (1990)

 The World Health Organization considers that both social skills and life skills can be used with the same meaning, because they are similar types of skills to be developed (WHO, 1997). For their part   Durán et al. (2015) , they affirmed that social skills are the set of effective behaviors to establish interpersonal relationships and are linked to the educational process to generate the training of the subject in a broad way, with aptitudes for organizational application with quality. (p. 204)

   Goldstein et al. (1980) , explained that social skills represent the set of varied and specific capacities that facilitate interpersonal contact, the solution of problems of a socio-emotional nature, and are applied in basic, advanced and instrumental activities. (pp. 9-11). Social skills were classified into six groups. As group I, they placed the first social skills, which are basic social skills, which correspond to listening, starting and maintaining a conversation, asking questions, thanking, introducing oneself and giving compliments. Group II comprises advanced social skills that include the skills developed by the individual to relate satisfactorily in social

environments, among which are asking for help, participating, giving instructions, among others (. Goldstein, 1980)

In group III, we have the skills related to feelings, that is, skills that the individual develops to know their own feelings, express them, understand the feelings of the other, solve scary situations and have the capacity for self-reward. Group IV is made up of alternative skills to aggression, which involves the development of self-control and empathy in angry situations. In group V, stress coping skills were grouped, which are those that emerge in times of crisis for the development of appropriate coping mechanisms. Finally, group VI is made up of planning skills, which includes skills related to initiative, goal setting, decision-making, problem solving, among others. (Goldstein, 1980)

The health situation due to the pandemic highlighted the weak capacity of people to apply social skills in the face of the changes that have occurred. In the field of university-level education, under a competency-based approach in favor of comprehensive training, the approach to social skills has been the least appropriate and their importance within the training process of students is diminished. Therefore, the challenge arises to implement methods and strategies that respond to the needs of comprehensive training, highlighting the relevance of strengthening social skills that facilitate responding to work, social and family demands that it deserves.

2.7. Quality assurance and training by university competences

Quality assurance as a process leads us to understand that there is no single quality or single concept of quality, when it is necessary to understand quality in the context of evaluation, and invites us to understand its qualitative and quantitative characteristics, by the very approach to the various aspects of education, where comprehensive training and the respective contribution to development are highlighted.

In this sense, the quality assurance policy is aligned towards the optimal provision of the educational service at the higher level, evaluating basic quality standards that must necessarily be present in higher level institutions that provide university and non-university education, therefore, it is directed towards higher education in both public and private universities. and in institutes of technological and pedagogical higher education in both the private and public sectors, and bearing in mind that the educational service must be guaranteed with quality, with comprehensive training and continuous improvement, focusing on the achievement of competent professional performance with the inclusion of citizen values. That added to the permanent changes, there is a great responsibility to respond to the expectations of the environment, managing to comply with educating for life.

In view of the above, it is pertinent to refer to the components involved in quality control in the evaluation of the Universities of Peru, including academic objectives, degrees, degrees and curricula, educational offer compatible with planning instruments, infrastructure and adequate equipment to fulfill the established functions, lines of research, availability of qualified teaching staff with no less than 25% full-time teachers, basic complementary educational services, labor insertion mechanisms, basic conditions of complementary quality (transparency of universities).

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However, achieving favorable results in the evaluation provides external and internal benefits for the educational institution that adopted a quality assurance system, in the external benefits are mentioned the confidence and security in the educational service that is provided, high levels of user satisfaction in the educational context, national and international recognition, competitiveness, transparency of the processes that are carried out. The internal benefits are aligned towards the improvement of the management of processes within the institution, levels of efficiency, effectiveness for a relevant educational service, of the attitude of service and the personal and professional growth of the actors of the university community, promotes the continuous improvement of the processes according to reality and the dynamization and integration of the actors of the University. Therefore, the insurance policy has a great contribution to the competency-based training of university students from the different universities nationwide, by improving the conditions for the training process of professionals in all university careers offered in Peru.

3.   Methodology

3.1.   Approach

Research with a quantitative approach, with a quasi-experimental design with pre-test and post-test, due to the level of depth it is explanatory, and due to the temporal scope it is longitudinal. To respond to the research purposes, the hypothetical-deductive method was used and due to its purpose it is applied.

3.2.   Units of analysis

It was made up of 80 Medical Technology students who belonged to the study sample, made up of two experiment groups and two control groups, both for the II and VI cycles, the control group was made up of 20 students and another 20 students constituted the experiment group. Both belonged to the academic semester 2021-I, of the Professional Career in Medical Technology with a Specialty in Clinical Laboratory and Pathological Anatomy of the National University of Jaén. Informed consent was obtained for participation. In the inclusion criteria, a study cycle was considered with 40 students of Medical Technology and who voluntarily agreed to participate in this research, without verbal and gestural communication difficulties.

3.3.   Harvesting techniques

Observation and survey were the techniques of choice, with the instruments used to collect information being the observation sheet and the Social Skills Assessment Scale (Goldstein, 1978 adapted by Tomas, 1994 -1995). The first instrument (Observation Sheet) was developed with 50 items considering the six dimensions of social skills. The Social Skills Assessment Scale, a validated instrument, applied as a pre-test and post-test, allowed the evaluation of a behavioral list of social skills, and its administration was at the individual level in the participating group, with an approximate time of 15 minutes. This instrument is made up of 50 items and consists of 6 groups of skills distributed in: First social skills with items 1 to 8, advanced social skills items 9 to 14, skills related to feelings items 15 to 21, alternative skills to aggression items 22 to 30, social skills against stress items 31 to 42 and social planning skills with items 43 to 21 50. It has

a graduated scale, Likert type from 1 to 4, being 1 = It happens very few times, 2 = It happens to me sometimes, 3 = It happens to me many times and 4 = It happens to me always.

The individual results and their interpretation were easily appreciated using the profile sheet of the Social Skills Assessment Scale, which consists of a graphic report, obtained by converting the direct scores recorded in the profile box and joining them by means of straight lines. To assess the level of social skills in the participants, categories were used with their respective direct score obtained from the total dimensions, the weighted direct score (PDP%) linked to the enneatype: In the category "Excellent level", the direct score obtained ranges from 164 to 200, the PDP is 82 to 100%, which is related to enneatype 9. For the "Good level" category, the direct score obtained is from 125 to 163, the PDP ranges from 62 to 81%, which belongs to enneatypes 7 and 8.

The "Normal level" category has a direct score obtained from 62 to 124, with the PDP being 31 to 61%, which is related to enneatypes 4, 5 and 6. In the "Low level" category is the direct score obtained from 21 to 61, with the PDP of 11 to 30%, related to enneatypes 2 and 3. Finally, for the "Deficient level" category, the direct score obtained is from 0 to 20, with the PDP from 0 to 10%, linked to enneatype 1. The percentile according to each category mentioned from deficient to excellent level is as follows: 0 to 25, 26 to 42, 43 to 57, 58 to 74 and 75 or more. (Goldstein, 1980, pp. 4-6)

3.4.   Analysis processing

For the presentation and processing of data, the tabulation technique was used, using double-entry tables for the respective recording, with frequency distribution. The statistical tables represented the results obtained. For the analysis and interpretation of the data, the SPSS version 26 software was used, statistical measures of centralization (arithmetic mean), dispersion measures (variance, standard deviation, and coefficient of covariation). The Kolmogorov-Smirnov normality test and the Student's T-test were used.

4.   Results

Pre-test by dimensions and by general level of social skills

Table 1 shows the before the application of the program, where the social skills by dimensions in the experiment group of both study cycles (II and VI) ranged from normal to good level. In this sense, they demonstrated that   Moreno-Murcia and Quintero-Pulgar (2021) there is no statistically significant difference between soft skills in relation to the professional cycle, making it clear that the development of soft skills must be generated throughout the educational process. However, he noted that   Salazar-Botello et al. (2020) the more university education advances, the greater the development of people's social skills.

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Table 1. Level of social skills by dimensions in the group experiment of II and VI cycle of Medical Technology – National University of Jaén, before the application of the program, 2021

Dimension	Experiment Group - Pretest									
	II Cycle					VI Cycle				
	Deficient	Low	Normal	Good	Excellent	Deficient	Low	Normal	Good	Excellent
	%	%	%	%	%	%	%	%	%	%
*D1. PHS	0	0	60	40	0	0	0	75	25	0
*D2. HSA	0	0	40	60	0	0	0	90	10	0
*D3. HSRS	0	0	70	30	0	0	0	80	20	0
*D4. HSAA	0	0	35	60	5	0	0	55	45	0
*D5. HSPHFE	0	0	50	50	0	0	0	80	20	0
*D6. HSP	0	0	25	75	0	0	0	70	30	0

Source: Authors' elaboration with information obtained from the application of the Social Skills Assessment Scale, 2021.

Legend:

- D1. PHS: Dimension 1. First social skills.

- D2. HSA: Dimension 2. Advanced Social Skills.

- D3. HSRS: Dimension 3. Social Skills Related to Feelings.

- D4. HSAA: Dimension 4. Social Skills Alternatives to Aggression.

- D5. HSPHFE: Dimension 5. Social Skills to Coping with Stress.

- D6. HSP: Dimension 6. Social Planning Skills.

Table 2 shows the general level of social skills prior to the application of the program, in the experiment group of II and VI cycles of Medical Technology students, highlighting a good level (55%) for the II cycle and normal level (85%) for the VI cycle. In relation to the above, Rivera et al. (2019) he obtained similar data, where the majority (52%) of university students have social skills at a normal level, in addition to 48% presented a good level in pretest. For his part, he specified that the university population represents a quarry of professionals who have the responsibility of responding to the social mandate that guides their training, because in their professional performance they require developed social skills. Padilla et al. (2019)

Table 2. General level of social skills in the group experiment of II and VI cycle of Medical Technology – National University of Jaén, before the application of the program, 2021

Experiment Group	Deficient		Low		Normal		Good		Excellent		Total
	N	%	N	%	N	%	N	%	N	%	
II Cycle	0	0	0	0	9	45	11	55	0	0	20
VI Cycle	0	0	0	0	17	85	3	15	0	0	20

Source: Authors' elaboration with information obtained from the application of the Social Skills Assessment Scale, 2021.

Post-test by dimensions and by general level of social skills

Table 3 shows the result after the application of the program, showing that the experiment group of the second and sixth cycles is at a good to excellent level, with a good level in all dimensions for both cycles. This is related to what was obtained by Mendo-Lázaro et al. (2016) , who pointed out that students with training in social skills achieve higher average scores in social skills. They highlighted the effectiveness of social skills training, and endorsed the convenience of including and controlling the previous training variable in social skills. In the same way, Alonzo et al. (2015) they stated that the professionals needed by today's society must be sufficiently prepared to solve problems in their environment, articulating conceptual, procedural and attitudinal knowledge, to apply what they have learned in the classroom in concrete situations of daily life.

Table 3. Level of social skills by dimensions in the group experiment of II and VI cycle of Medical Technology - National University of Jaén, after the application of the program, 2021

Dimension	Grupo Experimento - Postest									
	II Cycle					VI Cycle				
	Deficient	Low	Normal	Good	Excellent	Deficient	Low	Normal	Good	Excellent
	%	%	%	%	%	%	%	%	%	%
D1. PHS	0	0	0	70	30	0	0	5	75	20
D2. HSA	0	0	0	60	40	0	0	5	75	20
D3. HSRS	0	0	5	65	30	0	0	15	60	25
D4. HSAA	0	0	0	75	25	0	0	5	70	25
D5. HSPHFE	0	0	5	60	35	0	0	10	60	30
D6. HSP	0	0	0	65	35	0	0	0	75	25

Source: Authors' elaboration with information obtained from the application of the Social Skills Assessment Scale, 2021.

Table 4 shows the general level of social skills in the experiment group of students of the II and VI cycles of Medical Technology after the application of the program; good level was predominant for both groups (65% and 80% respectively), likewise, the excellent level stood out with a higher percentage (35%) in the second cycle. In this sense, he stressed that Vera (2017) the field of higher education needs to prepare students for a more active participation in the world of work, which requires the development of social skills, personal qualities that transform them into more adaptable, proactive, resilient and responsible collaborators. This confirms that it is imperative to strengthen social skills from the university educational context.

Table 4. General level of social skills in the II and VI cycle of Medical Technology experiment - National University of Jaén, after the application of the program, 2021

Experiment Group	Deficient		Low		Normal		Good		Excellent		Total
	N	%	N	%	N	%	N	%	N	%	
II Cycle	0	0	0	0	0	0	13	65	7	35	20
VI Cycle	0	0	0	0	0	0	16	80	4	20	20

Source: Authors' elaboration with information obtained from the application of the Social Skills Assessment Scale, 2021.

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Hypothesis Demonstration

Table 5 shows that the difference in means (pre-test and post-test) by social skills dimensions of the experiment and control group of the second cycle of the Medical Technology Professional Career revealed an increase of 32 points compared to the pre-test in the experiment group, demonstrating that the application of the socio-formative didactic strategies program in the participating group is significant. Meanwhile, for the control group, no significant difference was observed. In this framework, they verified the effectiveness of a training program to develop social skills where it was possible to promote the learning of skills that make people emotionally competent and capable of controlling their emotions, determining that social skills can be taught Rivera et al. (2019) and raised the need to carry out a continuous process of emotional literacy. Therefore, the approach of the educational model focused on a comprehensive education requires the development of social skills that are immersed in the multidimensionality of the human being in order to generate professionals capable of responding to the demands of their reality.

Table 5. Comparison of pre-test and post-test means and general and by dimensions of social skills of students of the II cycle of Medical Technology - National University of Jaén, 2021

Dimensions	Experiment Group		Control Group	
	Pre-test	Post Test	Pre-test	Post test
D1. PHS	18.55	24.75	19.35	19.35
D2. HSA	14.15	19.20	14.40	14.45
D3. HSRS	15.85	21.30	16.25	16.25
D4. HSAA	23.40	27.35	23.45	23.45
D5. HSPHFE	29.75	37.15	28.85	29.10
D6. HSP	21.90	25.85	21.80	21.95
Total	123.60	155.60	124.10	124.55

Source: Authors' elaboration with information obtained from the application of the Social Skills Assessment Scale, 2021.

Table 6 presents the difference in means (pre-test and post-test) by dimensions of social skills, of the experiment and control group of the VI cycle of the Medical Technology Professional Career, revealing the general increase in the post-test by a total of 35.75 percentage points compared to the pre-test of the experiment group, which is significant in the application of the program. Meanwhile, for the control group, no significant difference was observed. This result was supported by the one who noted Vásquez (2019) that the average level of general social skill with pre-test was 135.4 points and the average level of general social skill in the post-test reached 177.4 points, obtaining an increase of 42 points in the participating university students. In addition, they argued that socioformative assessment can be applied to assess socio-emotional skills. Similarly, Rodríguez-Jiménez & Carrillo-Ruíz (2018) Moreno-Murcia and Quintero-Pulgar (2021) they determined that the design of programs to strengthen and develop soft skills is essential, evidencing the need to generate changes in the educational system to achieve a comprehensive education. Similarly, Pérez-Escoda et al. (2019) he said that the intervention improves the accuracy in the identification of emotions, increases the pattern of regulatory thoughts and assertive behaviors.

Table 6. Comparison of pre-test and post-test means in general and by dimensions of social skills of students in the sixth cycle of Medical Technology

Dimensions	Experiment Group		Control Group	
	Pre-test	Post Test	Pre-test	Post test
D1. PHS	18.3	23.70	18.8	19.00
D2. HSA	12.5	17.35	13.9	14.10
D3. HSRS	15.3	20.40	16.5	16.40
D4. HSAA	21.1	27.80	22.1	22.45
D5. HSPHFE	27.0	35.45	27.0	27.90
D6. HSP	18.8	24.05	20.2	21.00
Total	113.00	148.75	118.45	120.85

Source: Authors' elaboration with information obtained from the application of the Social Skills Assessment Scale, 2021.

Table 7 reveals the increase in the mean with respect to the experiment group of the II and VI cycles of Medical Technology, showing a priority concentration in the II cycle in dimensions 5 (Social skills to cope with stress) and 1 (First social skills), with 7.4 and 6.2 percentage points respectively. For the VI cycle, the greatest increase occurred in dimensions 4 (Alternative social skills to aggression) and 5 (Social skills to cope with stress), with 6.7 and 8.45 percentage points respectively, demonstrating the influence of the program on the dimensions of social skills. On this, Magdaleno-Arreola (2018) he emphasized that socio-emotional skills, addressed from socio-training, consists of promoting human talent. In this sense, they specified Martínez-Iñiguez et al. (2021) that the socio-formative educational model has the purpose of leading to the comprehensive training of students and other university actors. In the same way, Oviedo and Seville (2018) they argued that, in the socio-formative approach, the interactive view is important and the need to integrate components for a comprehensive training, recognizing that socio-emotional skills are essential in the development of the human being throughout their training process.

Table 7. Comparison of the increase in means in general and by dimensions of social skills in the group experiment of the II and VI cycle of Medical Technology

Dimensions	Experiment Group	
	II Cycle	VI Cycle
	M	M
D1. PHS	6.2	5.4
D2. HSA	5.05	4.85
D3. HSRS	5.45	5.1
D4. HSAA	3.95	6.7
D5. HSPHFE	7.4	8.45
D6. HSP	3.95	5.25
Total	32.00	35.75

Source: Authors' elaboration with information obtained from the application of the Social Skills Assessment Scale, 2021.

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5.   Conclusions

-        The application of the program of socio-formative didactic strategies significantly influences the strengthening of social skills of students (experiment group) of the II and VI cycles of Medical Technology, evidenced in the increase of the mean value through pre-test and post-test, of 32 and 35.75 percentage points respectively.

-        Dimension 5 (social skills to cope with stress) stood out in greater influence of the socio-educational didactic strategies program, with an increase in the value of the mean (pre-test and post-test) of 7.4 and 8.45 percentage points for the II and VI cycles, respectively.

-        Before the application of the program, the general level of social skills was located for the II and VI cycles (experiment group) in the category of normal to good level (100%), and a significant majority of the control group also excelled in these categories (95%).

-        The categories from normal to good level before the application of the program stood out in all dimensions of the participants' social skills.

-        After the application of the program, the general level of social skills was placed for the experiment group of both cycles, in the categories of good to excellent level (100%), and in the control group the normal level category was preferentially maintained with 55% and 60% respectively.

-        After the application of the program, the categories of good to excellent level predominated in the dimensions of social skills in students of the experiment group of the cycles involved.

Under a reflective and comprehensive vision regarding the strengthening of social skills in university students, a pending and urgent issue to be developed from the curriculum of both public and private universities, and in the current context where social problems are increasing and the demands of work performance under standards of compliance with goals, it places health professionals in an environment where they have to respond satisfactorily to work challenges, professional, personal and family, it is essential to think of a comprehensive education focused on each of the dimensions of the human being to achieve development in its entirety, in other words, in educating for life in its different contexts where the management of social skills is elementary, which can be learned by applying a Program of Socio-formative Didactic Strategies.

6.   Thanks

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