

## **Socio-emotional skills in higher education: experience in a student scientific group**

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### **ABSTRACT**

The purpose of this article is to assess the importance of developing socio-emotional skills in Higher Education to train future scientists, starting from student scientific work. Methods such as observation, interviews, surveys, and Goldstein's (Tomas, 1995) social skills checklist were used, which allowed for the identification of strengths and areas for improvement. The main conclusions show that the proposed strategic actions aimed at developing socio-emotional skills within the educational process can enhance research performance, fostering a culture of collaborative work and scientific innovation.

**Keywords:** Socio-emotional skills; Higher education; Student scientific groups; Formative research

### **Introduction**

Student scientific groups (SSG) constitute an opportune scenario for the development of various skills essential for future performance, as they favor the approach and insertion of students in academic, work, research and social spaces with recognized possibilities of

learning and demonstration, contributing to the academic success and the integral formation of the university student.

In the dynamics of current scientific environments, all research findings need to be communicated and disseminated to favor that, from the contrast, individual and group reflection, creative solutions emerge in the face of changing and diverse problems that require from each participant both the ability to adapt to different environments, and the development of critical thinking to manage possible cognitive and interpersonal conflicts. These are demands that reveal a problem to be solved in the area of professional training, associated with how to favor the development of skills to manage science effectively through the work with student scientific groups. The need to improve the ways that favor institutional projection constitutes a response to the need to train students capable of becoming scientific leaders.

The article synthesizes the experiences achieved in the work with the GCE “Science Managers” formed by students of the Faculty of Education Sciences in Universidad de Oriente, Santiago de Cuba province. This group is linked to the FORGESCI Sectorial Research Project, through which the development of socioemotional skills has been intended as a starting point for their research and management training in science, innovation and communication, enabling students to actively participate in the solution of local socio-educational problems.

The experience required a diagnosis of the development of socioemotional skills in the members of the GCE, applying Goldstein's Social Skills Checklist (Tomas, 1995), which made it possible to evaluate dimensions such as communication, teamwork, coping with stress and conflict resolution. The results obtained justify the proposal of strategic actions to improve the scientific training of GCE students through the development of socioemotional skills.

## **Development**

In higher education, scientific training is an integral process aimed at providing students with the resources to understand, analyze and generate knowledge in various branches of knowledge. Such training implies, in addition to the acquisition of research

methodologies, the development of critical thinking, the ability to solve problems and the application of knowledge in practice (Gonzales *et al.*, 2022). Therefore, scientific training is a pillar of university education.

Socioemotional development occupies a privileged place within scientific training, considering that research in most cases is developed in collaborative spaces that demand collective construction of knowledge in an environment of fraternity and empathy, leadership skills, communication skills and conflict resolution, which are associated with the development of self-referents that affect the levels of self-regulation achieved by each member of the GCE.

Durlak *et al.* (2011) show that socioemotional skills improve the academic and professional performance of students, as they facilitate effective interaction with others, as well as adaptation to highly demanding environments and the management of stress related to research work. Within the GCE, these skills guarantee the diagnosis of diverse problems, reflective questioning, the projection of diverse alternatives to solve conflicts based on the application of scientific methods, the ability to make others visible, to take them into account, to unite wills to obtain scientific results and their dissemination.

In Cuban higher education there are ample possibilities to foster the necessary relationship between the development of socioemotional skills and CGE, provided that this purpose is intended in the design and deployment of substantive processes and particularly, the educational strategy of the academic year to promote the interdisciplinary approach and critical reflection of each member of the CGE in the realization of the research task undertaken, which complements their academic training.

For their part, Navarro *et al.* (2022) emphasize that “the development of student scientific groups in universities is a necessity in terms of new knowledge and a more comprehensive training of future professionals” (p. 1). This confirms the relevance of these groups in the professional formation of students, training them to face scientific and social challenges of the country.

In the context of pedagogical careers, student scientific groups enhance their significance, as they contribute to sustain the theoretical and praxeological criteria that are assumed to enhance a mode of action consistent with the investigative function proper to the professional role of an educator. According to González *et al.* (2017, p. 2) these are groups whose purpose is to “propitiate systematically the analysis of useful topics for scientific

development”, in which favorable spaces are generated for reflection and debate on current problems of reality, stimulating the production of innovative solutions from the student vision.

Authors such as Kuzema and Vishnekova (2017), ratify that participation in these groups provides students with the deepening and significant expansion of their knowledge. This prepares future teachers to face academic and professional challenges, raising their academic and scientific level.

A research conducted by Nuñez (2020) on the Student Scientific Groups in the Psychology Pedagogy career at the University of Granma, reveals important work guidelines that guide the processes of organization and management of the SCGs, offering in this sense a vision of the strategic cycle of work with these groups.

A similar study developed by Rivero-Morey *et al.* (2021) at the University of Medical Sciences of Cienfuegos, emphasizes the possible impacts exerted by these groups in the promotion of research culture among students, as well as the degree of independence and creativity they provide to their members, through the generation of spaces for the socialization of work results through the creation of scientific journals, “participation in class festivals, history forums and they recognize the work with the Student Assistants movement and the creation of research projects” (p. 1).

Likewise, Navarro *et al.* (2022) revealed through a descriptive, prospective research, deployed with a CGE in the University of Medical Sciences of Cienfuegos the results shown by its members, in relation to the application of knowledge of research methodology that made possible their insertion in research and in turn, the design of an extracurricular training program through the CGEs which facilitate the acquisition of research skills by students.

Similarly, Pancorbo *et al.* (2024) identify in their studies the barriers that affect the effectiveness of the integration of students to research processes, resulting in a valuable contribution to the Educational Sciences, from their proposal of “the scientific and practical bases for the formation and development of teams in strategic projects” (p. 1) overcoming the identified barriers.

It is recognized through these studies, the place of student scientific work as a formative scenario in higher education, since they provide methodological tools to meet the challenges associated with the direction of scientific research, and thus the strengthening

of such groups within universities as a guarantee of scientific progress and the solution of relevant problems in different areas of knowledge.

The research experiences that have been developed consider the GCE “Science Managers” of the Faculty of Education Sciences at the Universidad de Oriente, integrated by students of the Pedagogy Psychology Career, to whom the Goldstein's List of Social Skills was applied, to diagnose their level of development in the members of the group.

The instrument includes 6 scales (I-VI) that evaluate different dimensions of socioemotional development in students and include aspects of social interaction, other basic communication skills, and advanced skills from the social point of view, including emotional regulation, teamwork, leadership and conflict resolution. Developing these dimensions is essential to achieve an appropriate adaptation to research scenarios and to the dynamics of scientific management.

In the training dynamics within the scientific group, special attention was paid to the evaluation, diagnosis and strengthening of socioemotional skills that are determinant for the management and innovation of science in socio-educational contexts, such as: communication skills, leadership, self-regulation, emotional and collaborative teamwork.

Below (Table 1), the levels of socioemotional skills development identified are revealed.

**Table 1.** Diagnosis of Goldstein's Social Skills Checklist

Number of students	Rating	Direct score on the scales						Total	HSE level
		I	II	III	IV	V	VI		
1	7	27	25	28	39	47	35	201	High
2	6	32	23	25	35	47	34	196	Medium
3	6	23	24	30	36	48	29	190	Medium
4	5	33	16	25	32	44	32	182	Medium
5	4	31	23	21	33	36	32	176	Medium
6	4	24	23	25	31	42	29	174	Medium
7	3	26	20	22	24	39	24	155	Under

**Source:** Self elaboration

The results show the inconsistency in the scores obtained by the students, which fluctuate between 155 and 201 points, which determines the real value of the student's

socioemotional development, based on their self-assessment and according to the existing scales.

The value obtained was classified in Good, Medium and Low levels. Only 1 student, representing 14.3%, obtained a score of more than 200 points, placing him in the High level, showing an advanced development of social skills and a greater facility to interact in scientific environments. Subsequently, 5 of the 7 students diagnosed, equivalent to 71.4%, obtained a score of 175-199 points, which means that they are students who possess functional skills for communication and teamwork, however, although these students are located at a Medium level, they can reinforce and acquire other skills with intervention strategies. On the other hand 1 student, equivalent to 14.3%, reached a Low level by obtaining a score below 175, demonstrating difficulties in social interaction, emotional regulation, and communication. These results require intervention to improve the student's performance in collaborative contexts and for research management.

Three levels of socioemotional skills development were identified; the following table 2 summarizes the data obtained.

**Table 2.** Levels of social skills development among the students evaluated

<b>Level of social skills</b>	<b>Number of students</b>	<b>Percentage (%)</b>
Low	2	28.6%
Normal	4	57.1%
Good	1	14.3%

**Source:** Self elaboration

As we have argued in this article and based on the evidence of the results of the diagnosis, it is recognized that research training and particularly, that of science managers within the GCE needs to strengthen both the students' research competencies and their socioemotional skills as a guarantee for scientific management and contribution in small and large work groups.

Consequently, the relevance of designing a strategic plan with specific actions, tasks and objectives that make possible the achievement of this goal in the members of the CGE and that constitutes the route to be followed by other student scientific work groups is assessed.

For its realization, the starting point was to identify:

- The major difficulties diagnosed
- The objectives pursued by the CGE and particularly the tasks assigned.
- The academic year of the participants and the objectives of the year accordingly.
- The possibilities of inclusion in the educational strategy of the year.
- The proposal of spaces for the practical realization of these tasks.

The conception of these actions required generating spaces for consultation with the members of the research project, as well as with the academic year group, as a resource to establish the pertinence of these actions and the search for consensus to guarantee the follow-up of the quality in their fulfillment, considering that all of them are basic for the development of the scientific work of the CGE.

These skills guarantee that the research tasks assigned to members of the CGE, with a view to their preparation as future science managers, will allow them to visualize and articulate innovation strategies that will enable them, in the future, to transfer knowledge efficiently to community actors.

Therefore, the work within this (GCE) transcends theoretical research and involves students in a direct exchange with various sectors of society, which requires a sufficient level of emotional intelligence and socioemotional skills. See Table 3

**Proposal of strategic actions for the development of socioemotional skills in the Student Science Group (GCE) “Science Managers”.**

**Table 3.** Strategic Plan for the development of socioemotional skills in the GCE “Science Managers”

<b>Strategic Actions</b>	<b>Actions</b>	<b>Tasks</b>	<b>Objective</b>
<b>Integration of social-emotional skills modules in the curriculum.</b>	Include subjects or modules within the career curriculum that strengthen communication, leadership and teamwork.	Design a social-emotional skills training program aligned with the curriculum.	Ensure that students receive training in socioemotional skills from the curriculum.
<b>Workshops on effective communication and scientific argumentation</b>	Organize periodic workshops with specialists in communication and science to improve oral and written argumentation.	Plan and execute at least one monthly workshop on science communication.	Improve students' communication and argumentation in scientific contexts.
<b>Training in conflict resolution and teamwork</b>	Implement role-playing dynamics and simulations to improve group cooperation and disagreement management.	Develop at least three group dynamics per semester to strengthen conflict resolution.	Enhance students' ability to resolve conflicts and collaborate effectively.
<b>Development of emotional regulation and stress management strategies.</b>	Develop training sessions on emotional regulation based on mindfulness and stress management techniques.	Conduct practical emotional regulation sessions at the beginning and end of each semester.	Reduce stress and improve emotional regulation in situations of high academic demands.
<b>Leadership and collaboration activities in scientific projects</b>	Encourage leadership in scientific projects by assigning roles and responsibilities within the CGE.	Assign a leadership role in each research project within the GCE.	Strengthen student leadership in the management of research projects.
<b>Evaluation and monitoring of social-emotional development in the CGE.</b>	Apply the Goldstein Social Skills Checklist each semester to measure progress and adjust strategies.	Record and analyze results of social-emotional skills assessments to measure progress.	Continually assess and improve the social-emotional skills of GCE members.

**Source:** Self elaboration

These analyses raise new questions associated with the implementation of these actions and the interest in establishing whether they will guarantee that CGE members develop as scientific leaders with solid socioemotional skills that will allow them to solve scientific problems in different contexts. It is conjectured that articulating socioemotional training within the curriculum, using practical workshops and systematically evaluating their development, can enhance the impact of student participation in the management of socio-educational science and innovation, with the ultimate aim of contributing to the territorial development of Santiago de Cuba and the progress of higher education in the country.

## **Conclusions**

It is concluded that in order to improve the research work and the management of research projects in the GCE “Science Managers”, it is necessary to develop socioemotional skills. The diagnosis carried out using Goldstein's Social Skills Checklist made it possible to identify strengths and weaknesses related to the students' socioemotional development, proving the urgency of integrating them into the training process. Future research could assess the impact of these actions on student performance and satisfaction within the GCE.