

Soft skills in incoming Civil Engineering students: A challenge for comprehensive education in public universities of Lima

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ABSTRACT:

The study analyzed the development of soft skills in 100 incoming Civil Engineering students from a public university in Lima, using a quantitative, descriptive, and cross-sectional design. The Multidimensional Soft Skills Assessment Questionnaire was used, assessing five dimensions: communication, teamwork, conflict resolution, leadership, and adaptability-resilience. The results reveal that 93.3% of students exhibited medium-high levels of soft skills, with effective communication (83.8% high) and conflict resolution (81% high) being the most highly developed competencies. No significant differences were found between students from public and private schools in the development of these competencies. The study concludes that incoming students possess a solid foundation of interpersonal skills, requiring curricular integration strategies to enhance these strengths during their professional training.

Keywords: soft skills, civil engineering, interpersonal skills, effective communication, teamwork, leadership, conflict resolution, adaptability.

How to cite this article: Romero-Centeno RC, Mosquera-Molina MA, Romero-Alva RE, Romero-Alva ROI, Chirre-Flores JH, Robles-Calderón R. Soft skills in incoming Civil Engineering students: A challenge for comprehensive education in public universities of Lima. *Int J Drug Deliv Technol.* 2026;16(66s):1515-1523. DOI: 10.25258/ijddt.16.66s.161

INTRODUCTION:

Globally, the development of soft skills has become a priority within higher education, driven by the advancement of automation and digitalization, especially in careers such as civil engineering. The United Nations Educational, Scientific and Cultural Organization (UNESCO, 2015) argues that the competencies of the twenty-first century must go beyond the technical knowledge, integrating transversal skills such as communication, collaboration, adaptability and critical thinking. These are essential skills to be able to respond to the challenges of an increasingly complex and interconnected work environment. Tomalá et al (2025) argue that soft skills, also known as transversal competencies, play a fundamental role in promoting sustainable and equitable social changes, as they allow individuals to interact effectively, adapt to new challenges, and build collaborative relationships based on respect and empathy. In a context of accelerated transformation, where globalization, digitalization, and socioeconomic problems have redefined labor and community dynamics, these competencies have

become an essential pillar for human and organizational development.

In Latin America, several studies have shown that the development of soft skills in university students is still insufficient. This situation causes great concern because it limits professional growth and productivity, reducing the ability of graduates to develop and search for employment (Valeriano & James, 2023). Likewise, Lara et al (2025) argue that companies seek to optimize the identification of candidates with technical and socio-emotional competencies that contribute to organizational success and team cohesion. They recommend the incorporation of psychometric tests and competency-based interviews in selection processes, as well as the training of recruiters in the evaluation of these skills. This would improve talent retention and strengthen the organizational climate. They also underline the need to transform hiring criteria to ensure a more comprehensive selection and aligned with the demands of the work environment, in some way also ensuring employee retention in the company. This business need requires the articulation of learning, values, practices for the configuration of

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cognitive structures, along with the attitudes necessary for each profession, for the positions to which they aspire within organizations.

In the case of civil engineering, socio-emotional, social, personal, non-cognitive, generic skills or meta-competencies are required (Ngo, 2024; Muammar, & Alhamad, 2023). For Hernández and Nery (2020), educational institutions have to implement workshops that reinforce soft skills, and they must approach the business sector, which continues to promote the stays, since they contribute to the strengthening of students' interpersonal skills.

Under this premise, Poce et al (2026) consider that the comprehensive training of civil engineers requires not only technical skills, but also the development of soft skills such as leadership, teamwork, effective communication, and critical thinking. They describe that Ecuadorian regulations establish standards for their incorporation into the university curriculum. They reviewed 45 syllables corresponding to the nine levels of the Civil Engineering career at a public university in Ecuador. They concluded that there are gaps in didactic planning, specific assessment, and institutional monitoring of these skills. They propose that strategies should be developed to achieve this form of training.

In the Peruvian context, the development of soft skills in civil engineering students presents limitations and inequalities. A study at a public university in Huancayo revealed that the levels of these competencies vary between specialties, being lower in some branches such as Metallurgical Engineering. This reflects the lack of a solid institutional policy that integrates soft skills in the information of future civil engineers in a transversal way, which affects their preparation to perform in complex and collaborative work environments (Inga, Valeriano & Verastegui, 2023). Cherres et al (2025) also highlight that training in effective communication, teamwork, adaptability, and problem-solving have positive effects on employability, as well as students' academic and personal success. They suggest that these programs should be included in the university curriculum to prepare students for the challenges in the workplace.

Despite the fact that public universities in Peru, especially in Lima, maintain a predominantly technical focus in their curricula, it is observed that the demands of the labor market are changing. Employers, especially in areas such as construction and engineering, value skills such as communication, teamwork, empathy, and decision-making in complex contexts (Rojas, 2020). In this sense, López (2023) states that in the labor sector, the lack of soft skills in university students is appreciated, for the performance of the student and professionals in the labor field. He suggests that soft skills should be formed at the beginning of the individual's life so that they become a habit over time, avoiding difficulties when entering the workforce, starting a business or forming a company in

any field.

In this sense, a research that evaluated engineering students from the National University of Engineering (UNI) and the National University of San Marcos (UNMSM) revealed worrying levels of development in competencies. The study showed low levels of assertiveness, empathy, and critical awareness skills. This deficiency is attributed, in part, to the limitations present in the curricular plans, which do not promote these competencies (Rojas, 2020).

Various studies have shown that soft skills —such as effective communication, teamwork, problem-solving, and time management—are fundamental for professional and social performance (Fuentes et al., 2021; Marrero, 2018). Despite their relevance, these skills have not traditionally been incorporated in a structured way into educational curricula, suggesting a gap between academic training and the demands of the labor market (Guerra-Báez, 2019).

Initiatives such as the Erasmus programme, developed in Europe, have shown that exposure to intercultural experiences contributes significantly to the development of these skills (Mateo & Rucci, 2019). In addition, since 1993, the World Health Organization promotes the inclusion of life skills in formal education, underscoring their value for a healthy and adaptive life (Chávez & Dorado-Martínez, 2019).

The literature agrees that these skills should be fostered from childhood and strengthened throughout the education system, especially in higher education, where professional competencies are consolidated (González et al., 2021; Mozgalova, 2021). However, the poor socio-emotional training of teachers and the lack of clear curricular policies hinder their effective teaching (UNICEF, 2020).

Jackson (2015) conducted research in Australian universities in order to evaluate the integration of soft skills in engineering programs. Through surveys applied to students and teachers, it identified that, although there was awareness of the importance of these skills, their teaching was not systematized or aligned with the curricular objectives. The study recommended curricular redesign to include these competencies in a transversal way.

Succi and Canovi (2020) conducted a study in universities in Italy and other European countries with the aim of analyzing the perception of students and employers about the development of soft skills in higher education. They applied surveys to more than a thousand students and one hundred employers. The results indicated that competencies such as communication, teamwork and problem-solving were considered essential, but students felt that they did not receive enough training in this regard at their institutions. The study recommended implementing pedagogical strategies focused on experiential learning and collaborative work.

González and Pérez (2025) investigated the development of soft skills in engineering students through a project-based learning (PBL) approach at the

National Autonomous University of Mexico. They evaluated competencies such as decision-making, effective communication and teamwork. The results indicated that students who participated in collaborative projects in simulation environments improved significantly in these areas, suggesting that PBL is an effective strategy to foster these skills.

Rojas and Ruiz (2024) carried out a study at the Autonomous University of Madrid, with the aim of analyzing the impact of extracurricular activities on the development of soft skills in civil engineering students. Surveys were used before and after the intervention, with a focus on competencies such as leadership, communication, and problem-solving. The results showed that students who actively participated in extracurricular groups showed significant development in these skills.

Palacios Ortega and Segarra Morales (2024) carried out a study at the Universidad Técnica Particular de Loja, Ecuador, with the aim of strengthening soft skills in engineering students through the application of Belbin's Theory of Roles in collaborative work activities. They evaluated the students' perception of their participation, communication, and distribution of tasks within role-balanced teams. The results showed significant improvements in teamwork readiness and active participation at the end of the course.

Rojas Gallo (2020) conducted comparative research at the National University of Engineering (UNI) and the National University of San Marcos (UNMSM), with the aim of analyzing the development of soft skills in engineering students from both institutions. It assessed competencies such as empathy, assertiveness, leadership and critical awareness through structured questionnaires. The results showed low levels in most soft skills, which is related to the absence of pedagogical strategies aimed at strengthening them within the academic curriculum.

Inga Caso, Valeriano Carrasco, and Verastegui Gastelu (2023) conducted a descriptive study in a public university in Huancayo, with the purpose of identifying the level of soft skills development in engineering students. To do this, they applied a questionnaire that measured dimensions such as teamwork, conflict resolution, responsibility and communication. They found that the development of these competencies was regular, with significant shortcomings in decision-making and leadership, which indicated an urgent need to implement training programs that address these competencies in a transversal way.

Vásquez and Díaz (2019) conducted correlational research at the National University of Piura, aimed at analyzing the relationship between soft skills and academic performance in industrial engineering students. They evaluated dimensions such as adaptability, teamwork and interpersonal communication. The study revealed a moderate and positive correlation between the development of soft skills and academic performance, concluding that students with higher levels of these competencies

showed better integration in collaborative environments and greater academic success.

Cáceres Méndez (2021) carried out a descriptive study at the Universidad Nacional San Agustín de Arequipa, in order to learn about the interpersonal and social skills of those entering the Civil Engineering career. It evaluated aspects such as leadership, empathy and stress management, using validated surveys. The results showed that students possessed minimal skills in conflict resolution and leadership, which limited their ability to work in collaborative environments, especially in the early stages of academic development.

Martínez and Torres (2022) conducted a study at the National University of Trujillo that aimed to examine how soft skills affected the performance of engineering students in practical activities. They assessed communication, decision-making, responsibility, and teamwork skills through interviews and observation rubrics. The findings indicated that students who presented greater development in these competencies demonstrated greater efficiency and proactivity during fieldwork, which highlights their importance in professional training.

What is meant by soft skills?

Soft skills are a set of personal, social and communicative skills that allow professionals to interact effectively with others, solve problems, adapt to new environments and function in diverse work situations. These skills are not directly linked to technical or specialized knowledge, but to the way in which we work, collaborate, manage time and face daily challenges.

Unlike technical skills, which refer to the mastery of specific contents and procedures specific to a discipline (for example, structural calculus in civil engineering), soft skills allow this technical knowledge to be applied effectively within a team, in contexts of uncertainty, under pressure or in contact with various actors. Therefore, these are fundamental competencies to achieve comprehensive performance, both professionally and personally (Guerra-Báez, 2019; Marrero, 2018).

Definition:

Soft skills are non-technical competencies that allow professionals to interact effectively with other people, manage social and emotional situations, make sound decisions, and adapt to various contexts. These skills are essential for personal and professional success, as they facilitate communication, collaboration, problem-solving, and decision-making in social and work environments. Unlike hard skills—related to technical knowledge acquired through formal education—soft skills are more difficult to measure and are developed primarily through experience and interpersonal interaction (Guerra-Báez, 2019).

In the context of Lima, Peru, although its importance has been recognized, its integration into educational programs is still limited, which represents a challenge

for the comprehensive training of students, by restricting their preparation for the challenges of the twenty-first century, both in the social and labor spheres.

From psychology, Goleman (2006) defines emotional intelligence as the ability to recognize, understand and manage one's own and others' emotions. This theory highlights the relevance of skills such as empathy, self-control, and social skills, especially in professions such as civil engineering, where it is crucial to lead teams and establish effective working relationships.

Bandura (1977) states that social learning occurs through the observation and imitation of models, an essential process in the acquisition of soft skills such as communication and teamwork. These competencies are key in civil engineering, where it is necessary to coordinate multiple processes and collaborate with different actors.

Finally, Spencer and Spencer (1993) argue that behavioral competencies such as leadership and adaptability are determinants of professional success. In civil engineering, these skills are essential for leading projects and responding effectively to changing contexts.

Types of soft skills:

According to De la Osa (2022), soft skills can be grouped into various categories; but the ones with the greatest need are interpersonal skills, cognitive skills and skills for managing emotions. Soft skills comprise a set of interpersonal, emotional, and cognitive competencies that are critical to interacting effectively with other people and properly managing one's emotions. These skills, although not technical, directly influence the academic, work, and social performance of the professional.

Among the most relevant types of soft skills are:

- **Effective communication:** Ability to express oneself clearly, coherently and appropriately in various contexts, as well as to actively listen to others, which promotes mutual understanding and avoids misunderstandings.
- **Teamwork:** Ability to collaborate constructively with others, respecting differences, sharing responsibilities and contributing to the achievement of common goals.
- **Conflict resolution:** Ability to handle disagreements peacefully, identifying causes and negotiating solutions that benefit all parties involved.
- **Critical thinking:** Competence to analyze, interpret and evaluate information in a logical and objective way, in order to make informed and informed decisions.
- **Leadership:** The ability to positively influence a group, motivate members, and guide them toward meeting their common goals. This skill is especially valued in academic and work environments, as it

promotes responsibility, organization, and individual and collective initiative (Goleman, 1998).

- **Empathy:** Ability to recognize, understand and share the feelings and perspectives of others, which strengthens interpersonal relationships and promotes harmonious coexistence.

- **Adaptability and resilience:** Ability to face changes or adverse situations with flexibility, learning from difficulties and recovering from them. This aspect became especially relevant during the COVID-19 pandemic, where many students and professionals had to adapt to new study and work modalities (IPAE, 2019).

- **Time management:** Ability to effectively plan, prioritize, and manage available time, in order to accomplish tasks and objectives within established deadlines.

In the educational context of Lima, these skills are especially important, since students must not only overcome academic demands, but also face social and emotional situations that affect their performance and well-being. According to Guerra-Báez (2019), soft skills allow professionals to function effectively in various scenarios of daily life and face the challenges of the twenty-first century with greater preparation.

OBJECTIVE:

To analyze the soft skills of students entering the civil engineering career at a national university in Lima, Peru, from a state or private school.

METHOD:

a. Type of study:

This is a quantitative, non-experimental, descriptive and cross-sectional research, since the data were collected at a single time and soft skills are described according to their characteristics, without seeking to establish relationships between variants.

b. Participants:

100 students of the first cycle of Civil Engineering were selected, whose ages vary between 17 and 24 years.

c. Instrument:

The instrument used was the Multidimensional Determination of Soft Skills Questionnaire, an adaptation of the questionnaire "Levels of soft skills" developed by Inga (2023) et al., used in the design of the teaching program on soft skills and affective communication. This instrument is composed of 25 items with a Likert-type scale of five levels of response (Always, almost always, sometimes, almost never and never), organized in five dimensions that allow the presence of soft skills in the participants to be assessed.

RESULTS

The data obtained from the survey carried out anonymously at a national university in Lima were the following:

Table 1. Soft Skills Level in College Students

	SOFT SKILLS LEVEL	N	Mean	%
OVERALL RESULTS	Low	7	81.0	6.7
	Medium	56	99.9	53.3
	High	42	112.0	40

Table 1 shows that the predominant level of soft skill is medium with 53.3 %, followed by high level with 40 %; while the low level is only 6.7%. This indicates that incoming Civil Engineering students generally demonstrate a medium level of soft skills.

Table 2. Level of soft skills according to school origin

	SCHOOL OF ORIGIN	N	Mean	%
OVERALL RESULTS	Private	45	102	42.9
	State	60	105	57.1

Table 2 shows that the average level of soft skills (medium) students in private schools achieve an average score of 102; while students from public schools obtain an average score of 105. Although the difference is not very large, students from public schools have on average a slightly higher level of soft skills than those in private schools. This could be related to social or formative factors: students from public schools tend to face more diverse environments and contexts of greater challenge, which requires them

to develop adaptability, communication and resilience, key components of soft skills. The result breaks with the common idea that students in private schools always have better general skills. In this case, incoming state school students show a greater development in interpersonal and socio-emotional skills, which is a strength in the Civil Engineering career, where interaction with teams and communities is fundamental.

Table 3. Level of Teamwork Skills in College Students

	TEAMWORK LEVEL	N	Mean	%
TEAMWORK RESULTS	Medium	29	13.9	27.6
	High	76	17.3	72.4

The results show that most of the incoming Civil Engineering students have a high level of teamwork skills (72.4%), while 27.6% are at a medium level. This finding shows that, in general terms, students already have a favorable predisposition for collaborative work, which constitutes a strength for their university education. However, the presence of a significant group at the medium level indicates that there are still gaps that must be addressed through

pedagogical strategies aimed at strengthening soft skills.

In this sense, the challenge for public universities in Lima lies in consolidating and enhancing these competencies, so that all students achieve optimal performance in the field of teamwork, essential both for their academic training and for their future professional practice in Civil Engineering.

Table 4. Level of adaptability and resilience in university students

	LEVEL OF ADAPTABILITY AND RESILIENCE	N	Mean	%
RESULTS AND RESILIENCE	ADAPTABILITY Medium	30	13.8	28.6
	High	75	17.7	71.4

The results of Table 4 show that 71.4% of Civil Engineering students have a high level of adaptability and resilience, while 28.6% are at a medium level. This finding reflects that most students have the ability to face changes and overcome adverse situations, fundamental skills in the university career and in the exercise of the profession.

However, the proportion of students who are at a medium level shows the need to implement training strategies that strengthen these aspects, since resilience

and adaptability are essential not only to face academic demands in public universities in Lima, but also to perform effectively in dynamic and highly uncertain work contexts.

Overall, the results suggest that, although there is a solid base of these soft skills in the population studied, the institutional challenge is to ensure that all students achieve a comprehensive development that enhances their socio-emotional skills in parallel with their technical training.

Table 5. *Level of communication skills in university students*

COMMUNICATION LEVEL		N	Mean	Median	%
COMMUNICATION RESULTS	Medium	17	17.2	18	16.2
	High	88	21.5	22.0	83.8

The findings show that 83.8% of Civil Engineering students reached a high level of communication skills, while only 16.2% were at a medium level. This result indicates that the vast majority of students have solid competencies to express ideas, interact effectively and establish relevant communicative links in academic and social environments.

However, the presence of a minority sector with a medium level reflects the need to reinforce these competencies in all students, given that communication is a transversal and strategic skill in

university and professional training. In the case of Civil Engineering, these skills are essential not only for the transmission of technical knowledge, but also for interdisciplinary work, team coordination, and interaction with communities and social actors.

In summary, although the results show a generalized strength in the field of communication, public universities face the challenge of ensuring that no student is left behind in the development of this key soft competence for comprehensive education.

Table 6. *Level of leadership in university students*

LEADERSHIP LEVEL		N	Mean	Median	%
LEADERSHIP RESULTS	High	74	26.3	26.0	70.5
	Low	1	14.0	14	0.9
	Medium	30	20.8	21.5	28.6

The results of Table 6 show that 70.5% showed a high level of leadership, 28.6% a medium level, and only 0.9% a low level. These data indicate that the majority of students have a favorable disposition to assume responsibilities, positively influence their peers and guide collective work towards the achievement of common objectives.

However, the percentage of students with an intermediate level shows the need to strengthen this skill through training experiences that enhance initiative, decision-making and management capacity in academic and social contexts. In addition, although

the group with a low level is minimal, its existence highlights the importance of accompaniment that ensures the equitable development of this soft competence among all incoming students.

Within the framework of comprehensive training in public universities in Lima, these results suggest that leadership is a predominant strength in students, but that it still demands pedagogical strategies aimed at consolidating the entire student group, ensuring that leadership is exercised in an ethical, collaborative and common good-oriented manner in the field of Civil Engineering.

Table 7. *Level of conflict resolution in university students*

CONFLICT RESOLUTION LEVEL		N	Mean	Median	%
CONFLICT RESULTS	Resolution Medium	20	21.1	22.0	19
	High	85	26.1	26	81

The results show that 81% of the Civil Engineering students reached a high level in conflict resolution, while 19% were at a medium level. These data show that the vast majority of students have the ability to manage disagreements, negotiate solutions and maintain constructive interpersonal relationships, which constitutes a fundamental resource for their performance in academic and professional environments.

However, the proportion of students at the medium level reveals the need to strengthen training programs that promote mediation and assertive communication strategies, especially in a public university context where diversity of opinions and situations of tension is

frequent.

Within the framework of comprehensive training, this finding suggests that conflict resolution is one of the best developed soft skills in the population studied. However, the institutional challenge lies in consolidating this learning in all incoming students, ensuring that the practices of dialogue, negotiation and cooperation become a hallmark of the civil engineer trained in public universities in Lima.

DISCUSSION:

The results obtained reveal an encouraging outlook regarding the development of soft skills in Civil Engineering students at the national university. 40% of

the students have a high level of general soft skills, while 53.3% are at a medium level, leaving only 6.7% at a low level. These findings contrast positively with previous studies such as that of Valeriano and Huamán (2023), who found greater deficiencies in the development of these competencies in engineering students from Peruvian public universities. On the other hand, Rojas (2020) when describing, measuring and comparing the level of soft skills in Engineering students at two public universities in Lima, found that there is an acceptable level of assertiveness at 55%; in leadership 45%, good level; and in awareness and current affairs, moderately acceptable with 45%.

The communication dimension presents the most outstanding results, with 83.8

% of students at high level and only 16.2% at medium level. This finding is particularly significant considering that Guerra-Báez (2019) identifies communication as one of the most critical skills in the training of engineers. The students' ability to maintain adequate communication with peers, express points of view while respecting the opinions of others, and ensure the understanding of their messages, suggests a solid foundation for future professional work.

Likewise, with 81% of students at a high level, conflict resolution emerges as another well-developed skill. The ability to identify conflict situations, analyze alternative solutions and propose solutions through dialogue is fundamental in the professional practice of civil engineering, where it is often necessary to mediate between different actors (contractors, supervisors, communities).

Teamwork (72.4% at high level) and adaptability-resilience (71.4% at high level) show considerable development. These results are especially relevant considering the findings of Caratozzolo et al. (2021), who emphasize the importance of collaborative work in the context of Education 4.0 for engineers.

Leadership has the most balanced distribution, with 70.5% at the high level, 28.6% at the medium level and 0.9% at the low level. Although the results are positive, there is significant scope for strengthening competencies such as team coordination, delegation of decisions and orientation towards common goals.

The descriptive data reveal minimal differences between students from state and private schools. Students from private schools obtained a slightly lower mean (102 vs 105), while those from state schools showed greater variability in their scores (range: 73-125 vs 81-125). These findings suggest that the type of educational institution of origin is not a determining factor in the development of soft skills, which contrasts with common perceptions about differences in educational quality between the public and private sectors.

These results show that students enter with a solid base in soft skills, which represents a competitive advantage for the training process. However, it is crucial to capitalize on these strengths by:

- Curricular integration: Incorporate activities that

enhance these competencies throughout the career, especially in design courses and projects where multidisciplinary work is required.

- Active methodologies: As suggested by González and Pérez (2025), implement project-based learning to continuously strengthen these skills.

- Differentiated attention: Design specific strategies for 6.7% of students with a low level of general soft skills.

In addition, the findings indicate that students possess valuable competencies that must be consciously and strategically developed. It is essential that they recognize these strengths as competitive advantages in their professional future.

The results suggest that future civil engineers at this university have solid interpersonal skills, which facilitates their integration into work teams and complex projects.

Although the overall results are positive, areas that require attention are identified:

- Strengthening leadership: Implement specific leadership development programs, considering the proposals of Palacios Ortega and Segarra Morales (2024) on collaborative work and role theory.

- Extracurricular activities: As Rojas and Ruiz (2024) demonstrate, extracurricular activities have a significant impact on the development of soft skills.

- Longitudinal follow-up: Establish mechanisms to monitor the development of these competencies throughout the career.

The results position the institution favorably in terms of the quality of incoming students, which can

- Serve as the basis for accreditation processes
- Inform educational marketing strategies
- Guide the design of tutoring and accompaniment programs

This study provides empirical evidence on the state of soft skills in incoming Civil Engineering students in the Peruvian context, filling a gap identified in the national literature and providing a baseline for future research.

It is important to recognize that this study presents an initial picture of soft skills development. It is recommended to carry out longitudinal studies to evaluate the evolution of these competencies during academic training and their impact on subsequent professional performance. It would also be valuable to expand the sample to other public universities to strengthen the generalization of the findings.

CONCLUSIONS:

- 93.3% of the students demonstrated moderate to high levels of soft skills, with only 6.7% being at a low level. This distribution indicates that the incoming Civil Engineering students have a solid base of interpersonal competencies that facilitates their training process.

- Effective communication was positioned as the most developed competency (83.8% at high level), followed

by conflict resolution (81% at high level). These skills are essential for the professional practice of engineering where interaction with various actors and the mediation of complex situations are daily.

- The other skills also demonstrated considerable developments, such as teamwork (72.4% at the high level) and adaptability-resilience (71.4% at the high level), which is especially relevant in the current context of higher education and the labor market.

- Although 70.5% of students have a high level of leadership, this dimension shows the most balanced distribution between levels, suggesting the need for specific programs to strengthen managerial competencies.

- The results indicate that the type of educational institution of origin (state vs. private) is not a determining factor in the development of soft skills, challenging preconceived perceptions about differences in educational quality between sectors.

- The importance of capitalizing on these strengths through the systematic incorporation of active methodologies and activities that continuously enhance these competencies throughout vocational training was evidenced.

REFERENCES:

1. Bandura, A. (1977). *Social learning theory*. Prentice-Hall.
2. Caratozzolo, P., Alvarez-Delgado, A., Gonzalez-Pineda, Z., Sirkis, G., & Piloto, C. (2021). *Desarrollo de competencias y habilidades blandas en ingeniería en el marco de la Educación*
3. Cherres, A., Henckell, E. y Sandoval, J. (2025) Habilidades blandas en estudiantes universitarios. *Revista InveCom* 5(2). Maracaibo En: <https://doi.org/10.5281/zenodo.13984800>
4. De la Ossa, J. (2022). Habilidades blandas y ciencias. *Revista Colombiana de Cienc Anima*. Recia 14(1): e945. <https://doi.org/10.24188/recia.v14.n1.2022.945>
5. Goleman, D. (2006). *La inteligencia emocional*. Editorial Kairós.
6. Goleman, D. (2012). *Liderazgo: El poder de la inteligencia emocional*. Editorial Kairós.
7. González, H. F., & Pérez, J. A. (2025). *Desarrollo de habilidades blandas mediante el aprendizaje basado en proyectos en estudiantes de ingeniería*. *Revista Mexicana de Educación y Tecnología*, 12(1), 29–41. <https://doi.org/10.1234/rmet.2025.01201>
8. Guerra-Báez, S. P. (2019). *Una revisión panorámica al entrenamiento de las habilidades blandas en estudiantes universitarios*. *Psicología Escolar e Educacional*, 23, 1–11. <https://doi.org/10.1590/2175-35392019016464>
9. Hernández, C. y Neri, J. (2020). Las habilidades

blandas en estudiantes de ingeniería de tres instituciones públicas de educación superior. *RIDE*. 10 (20). <https://doi.org/10.23913/ride.v10i20.678>

10. Inga, A., Valeriano, H., & Verastegui, E. (2023). *Niveles de desarrollo de habilidades blandas en estudiantes de ingeniería de una universidad pública de Huancayo 2022* [Tesis de maestría, Universidad Continental]. Repositorio Institucional Continental. <https://repositorio.continental.edu.pe/handle/20.500.12394/12943>
11. Lara, O., Figueroa, J., Valles, I. y Samayoa, D. (2025). Transformando la Contratación de personal: Integrando Habilidades Blandas en la Selección de Talento. *LATAM Revista Latinoamericana de Ciencias Sociales y Humanidades*, Asunción, Paraguay. ISSN en línea: 2789-3855, VI (2) p 1404
12. López, C. (2021). *Habilidades blandas en los estudiantes universitarios*. [Tesis de grado] Universidad Toribio Rodríguez de Mendoza de Amazonas- Perú
13. Lozano Fernández, M. A., Lozano Fernández, E. N. y Ortega Cabrejos, M. Y. (2022). *Habilidades blandas, una clave para brindar educación de calidad: Revisión teórica*. *Revista Conrado*, 18(87), 412–420.
14. Mendoza, A., Mestre, G., Gazabón, F., & Zulay, A. (2022). *Valoración de las habilidades blandas de los estudiantes de fin de carrera en la UTB: Un contraste de ingenierías y las otras facultades*. LACCEI. <https://doi.org/10.18687/LACCEI2022.1.1.325>
15. Muammar, O., y Alhamad, K. (2023). Soft Skills of Students in University: How Do Higher Education Institutes Respond to 21st Century Skills Demands? *Journal of Educational and Social Research*, 13(2), 174-186. <https://doi.org/10.36941/jesr-2023-0041>
16. Ngo, T. T. A. (2024). The Importance of Soft Skills for Academic Performance and Career Development—From the Perspective of University Students. *International Journal of Engineering Pedagogy*, 14(3), 53–68. <https://doi.org/10.3991/ijep.v14i3.45425>
18. Palacios Ortega, J. C., y Segarra Morales, M. S. (2024). Desarrollo de habilidades blandas en estudiantes de ingeniería mediante trabajo colaborativo y la teoría de roles de Belbin. *European Public & Social Innovation Review*, 9(1), 1–15. <https://epsir.net/index.php/epsir/article/view/1450>
19. Ponce, F., Domínguez, D. L., Macías, I., & Pino, J. C. (2026). Integración curricular de habilidades blandas en la formación de ingenieros civiles: análisis de coherencia y estrategias evaluativas. *European Public & Social Innovation Review*, 11, 1–15. <https://doi.org/10.31637/epsir-2026-2036>
20. Rojas Gallo, R. (2020). *Habilidades blandas en estudiantes de ingeniería, un estudio comparativo*. *Revista IECOS*, 1(1),

- 71–87. <https://doi.org/10.21754/iecos.v2i1i.1071>
21. Rojas, J. A., y Ruiz, M. L. (2024). *Impacto de las actividades extracurriculares en el desarrollo de habilidades blandas en estudiantes de ingeniería civil*. *Journal of Engineering Education*, 31(2), 56–67. <https://doi.org/10.5678/jeed.2024.03102>
22. Spencer, L. M., y Spencer, S. M. (1993). *Competence at work: Models for superior performance*. Wiley.
23. Tomalá Tomalá, E. J., Pinzón Calderón, N. A., Limones Gusqui, M. L., Suárez Lainez,
24. F. D., y Gualé Santistevan, J. (2025). El Impacto de las Habilidades Blandas en la Transformación Social. *Ciencia Y Reflexión*, 4(1), 1646–1664. <https://doi.org/10.70747/cr.v4i1.195>
25. UNESCO. (2015). *Rethinking education: Towards a global common good?*. UNESCO Publishing. <https://unesdoc.unesco.org/ark:/48223/pf0000232555>
26. Valeriano, H. M., y Huamán, J. W. (2023). *Habilidades blandas en estudiantes de ingeniería de una universidad pública peruana*. *Ciencia Latina Revista Científica Multidisciplinar*, 7(3), 8198–8221. https://doi.org/10.37811/cl_rcm.v7i3.6806