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The relationship between soft skills and academic competencies in Industrial Engineering students

Relación entre las habilidades blandas y las competencias académicas en estudiantes de Ingeniería Industrial

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Abstract

The education of future industrial engineers requires more than technical knowledge. Students must also learn to communicate effectively, collaborate with others, analyse problems, and manage their emotions in academic and professional settings. Based on this premise, the study examined the relationship between soft skills and academic competencies among Industrial Engineering students at a private university in Chimbote. A quantitative, correlational, non-experimental, and cross-sectional design was used. All 124 students enrolled in the tenth academic term participated in the study. Data were collected through a structured Likert-scale questionnaire. Academic competencies were examined through the skills included in the graduate profile, particularly academic and communication skills. The findings revealed a strong positive relationship between soft skills and academic skills (Rho = 0.713, $p < .001$), together with a moderate-to-strong positive relationship with communication skills (Rho = 0.621, $p < .001$). Interpersonal interaction, critical thinking, and emotional management were also associated with stronger academic development. The study concluded that soft skills were significantly related to the competencies examined. Therefore, their systematic and cross-curricular integration into university programs is recommended to promote more comprehensive professional preparation and better alignment with the demands of the Peruvian labour market.

Keywords: soft skills, academic competencies, industrial engineering, professional training.

Resumen

La formación de los futuros ingenieros industriales no depende únicamente del dominio de conocimientos técnicos. También requiere capacidades para comunicarse, trabajar con otras personas, analizar problemas y gestionar las emociones en situaciones académicas y profesionales. A partir de esta premisa, el estudio examinó la relación entre las habilidades blandas y las competencias académicas de estudiantes de Ingeniería Industrial de una universidad privada de Chimbote. Se realizó una investigación cuantitativa, correlacional, no experimental y transversal, en la que participaron los 124 estudiantes matriculados en el décimo ciclo. La información se obtuvo mediante un cuestionario estructurado con respuestas en escala Likert. Las competencias académicas se analizaron desde las destrezas previstas en el perfil de egreso, específicamente las habilidades académicas y comunicativas. Los resultados mostraron una relación positiva alta entre las habilidades blandas y las habilidades académicas (Rho = 0,713; p < 0,001), así como una relación positiva moderada-alta con las habilidades comunicativas (Rho = 0,621; p < 0,001). Además, la interacción interpersonal, el pensamiento crítico y el manejo emocional aparecieron vinculados con un mejor desarrollo académico. Se concluyó que las habilidades blandas estuvieron significativamente asociadas con las competencias estudiadas. Por ello, se recomendó incorporarlas transversalmente en el currículo para favorecer una formación profesional más integral y pertinente para el mercado laboral peruano.

Palabras clave: habilidades blandas, competencias académicas, ingeniería industrial, formación profesional.

Introduction

Training industrial engineers can no longer be reduced to mastering technical methods, procedures, and tools. Once in professional practice, these engineers must also be able to articulate their ideas clearly, coordinate diverse teams, make decisions under uncertainty, and adapt to technological or organizational change. Such competencies matter more than ever as companies operate in environments that are increasingly competitive, interconnected, and in constant flux. Graduates' performance, then, hinges not only on their command of disciplinary knowledge but also on their ability to interact, communicate, and solve problems collaboratively.

This reality has prompted universities to revisit their curricula and place greater emphasis on learning outcomes that go beyond strictly disciplinary skills. The need is especially pronounced in industrial engineering, where managing processes and resources typically involves coordinating personnel, departments, and objectives that do not always align. Fuentes et al. (2021) observed that cross-cutting competencies, or “soft skills,” help students navigate professional situations that call for communication, adaptability, and collaboration. Similarly, Zepeda-Hurtado et al. (2019) noted that these competencies complement technical knowledge, fostering a level of preparation that more accurately mirrors the realities of professional life.

Aligning university curricula with labor-market needs remains a highly relevant issue across Latin America. Abreu Tejada et al. (2022) argued that the quality of a university program depends not only on its content but also on its capacity to meet social and productive needs. Absent that alignment, graduates may master specialized concepts yet still struggle to collaborate, negotiate, communicate results, or adapt to changing contexts. Employability should therefore be understood not merely as securing a job, but as the capacity to perform effectively, learn, and adapt within an organization.

Recent studies have likewise shown that socioemotional skills are linked to students' academic trajectories. Acuña Vásconez et al. (2024) found that their planned integration can foster readiness for professional life, while Rosas et al. (2022) added that these skills facilitate participation, cooperation, and the completion of academic tasks. Within engineering specifically, Coronado and Benítez (2023) identified communication, leadership, and collaborative work as key elements for tackling complex challenges.

Salguero and García (2024), for their part, emphasized the importance of emotional intelligence in managing relationships and the demands of the organizational environment.

Developing these skills is not simply a matter of adding theoretical content to the curriculum; it also calls for experiences that actively engage students, requiring them to make decisions, present arguments, and collaborate with their peers. Luey Garcia (2025) noted that gamification can offer opportunities to practice cooperation, communication, and problem-solving within engineering education. Estrella et al. (2024) found that gamified activities foster engagement with learning and can help build literacy-related skills. These findings suggest that interpersonal skills are strengthened through practice and interaction rather than through conceptual explanation alone.

The educator's role and the university's organizational structure also shape this process. Vega et al. (2025) showed how transformational leadership can foster academic environments open to innovation and to students' well-rounded development. Salas and Baque (2025) observed that the motivational strategies teachers employ help sustain student interest and facilitate the development of cross-cutting competencies. In both cases, learning was conceived as an experience requiring guidance, feedback, and opportunities to take on responsibility. Socioemotional development thus ceases to be a supplementary activity and becomes an integral part of everyday classroom dynamics.

Within industrial engineering, academic competencies encompass skills related to data analysis, process optimization, quality management, decision-making, and the efficient use of resources. For the purposes of this study, these aspects were approached through the competency dimension defined in the graduate profile, with particular emphasis on academic and communication skills. Their development does not rest on technical knowledge alone; students must also be able to justify decisions, present results, listen to differing points of view, and coordinate actions. González-Hernández and Granillo (2020) pointed out that the challenges of Industry 4.0 require integrating digital and social competencies, since technological transformation reshapes both production processes and workplace relationships.

In Peru, progress has been made in defining professional profiles and quality criteria for Industrial Engineering programs. Rivera Terán et al. (2023) stressed the importance of aligning graduate competencies with educational standards and with the needs of the productive sector. Defining a competency in the curriculum, however, does not guarantee that it will actually take hold during training. Although Álvarez Bautista (2005) offered an early look at graduates' employment situation, much of the subsequent literature has focused more on curricular design and accreditation than on the empirical relationship between soft skills and academic performance.

Active-learning methodologies offer one way to bring these two dimensions together. Mayorga-Ases et al. (2024) noted that project-based learning and collaborative work allow students to apply their knowledge while organizing tasks and solving real problems. Williams et al. (2024) added that such experiences can strengthen autonomy, responsibility, and leadership. Caballero Meneses et al. (2026) found that case resolution and contextualized projects favor the acquisition of cross-cutting competencies. Rather than treating technical and socioemotional learning as separate tracks, these approaches allow both to develop within the same academic experience.

Despite this progress, quantitative research examining this relationship among Peruvian industrial engineering students, particularly during the final stage of their studies, remains scarce. Available data do not allow us to determine with sufficient precision whether students who display stronger interpersonal, communication, and emotional skills, as well as critical thinking, also attain higher levels of academic competency as defined in their graduate profile. This gap makes it difficult to make informed decisions about the cross-curricular integration of behavioral skills (“soft skills”) and about selecting the pedagogical strategies best suited to strengthening them.

Based on this problem, the study posed the following research question: What relationship exists between soft skills and academic competencies among tenth-term Industrial Engineering students at a private university in Chimbote?

With this in mind, the study set out to analyze the relationship between behavioral competencies (soft skills) and academic competencies among tenth-term Industrial Engineering students at a private university in Chimbote. The research adopted a quantitative approach aimed at highlighting the link between socioemotional skills and academic and communication competencies. Its findings may serve as a reference for revising pedagogical strategies, strengthening curricular coherence, and promoting professional preparation that better meets the demands of the Peruvian labor market.

Methodology

The study was conducted using a quantitative, applied, correlational approach, with a non-experimental, cross-sectional design. Its purpose was to examine the relationship between the development of soft skills and the attainment of academic competencies among tenth-term Industrial Engineering students at a private university in Chimbote. For the purposes of the study, academic competencies were approached through the skills dimension defined in the graduate profile, focusing specifically on the academic and communication skills developed during university training. The population consisted of 124 students enrolled in the tenth term of the Industrial Engineering program, with the entire population treated as a census sample.

Data were collected using a structured questionnaire made up of five-point Likert-type items (1 = strongly disagree to 5 = strongly agree). The instrument gathered information on students' perceptions of their own development in soft skills, effective communication, leadership, teamwork, emotional intelligence, and problem-solving ability, as well as on the degree to which academic competencies had been achieved during their professional training.

The variables were organized into two main dimensions. The independent variable corresponded to soft skills, structured into socioemotional and collaborative subdimensions. The dependent variable was associated with the attainment of academic competencies, considering specifically the dimensions related to academic and communication skills derived from the skills dimension of the graduate profile. Both variables were operationalized through specific indicators aligned with the scientific literature and the program's curricular guidelines.

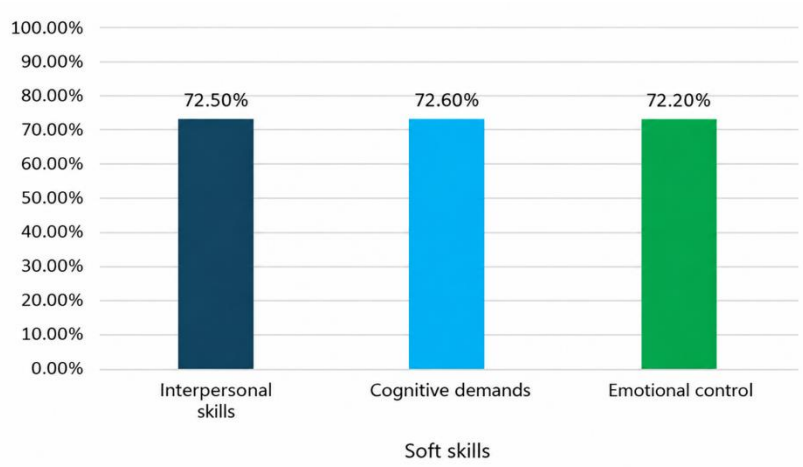
The instrument was developed based on a review of recent studies on competency-based education and socioemotional competencies in higher education. Before its final administration, a pilot study was carried out to identify potential difficulties in item comprehension, assess the coherence of the questions, and verify the questionnaire's overall functioning. Internal consistency was assessed using Cronbach's alpha coefficient, which yielded a value of 0.87, an adequate level of association among the items used to measure the study's constructs.

In the first phase, the data were analyzed using frequencies, means, and standard deviations to describe the distribution of the variables and identify key trends. The Kolmogorov-Smirnov test was then applied to examine the data distribution. Because the results were statistically significant ($p < .05$), the normality hypothesis was rejected. Spearman's rho coefficient was therefore used to assess the direction and strength of the relationship between variables. The significance level was set at .05, and data processing was carried out using specialized software.

The results were interpreted in light of recent research on cross-cutting competencies, engineering education, and employability. This comparison made it possible to identify similarities and differences with prior studies and to situate the findings within the context of Peru's higher education system.

Results and discussion

Figure 1. *Percentage distribution of soft-skill development levels among Industrial Engineering students.*



Note. Authors' own elaboration based on the results obtained from the questionnaire administered to Industrial Engineering students.

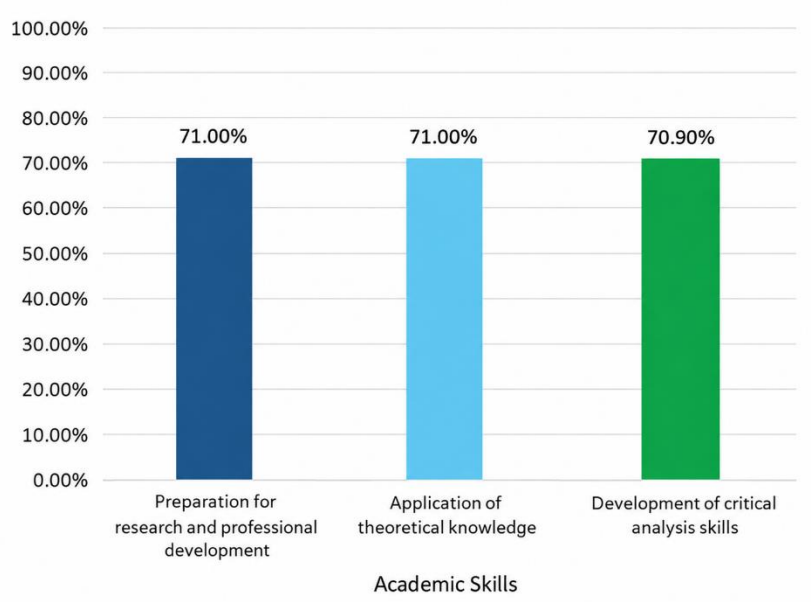
The results revealed a predominance of high soft-skill levels among Industrial Engineering students, as shown in Figure 1. Within the interpersonal competencies dimension, 72.5% of students reached a high level, with particular strength in effective communication, teamwork, and empathy. The cognitive skills dimension likewise showed 72.6% at a high level, reflecting capacities associated with decision-making, reflective thinking, and critical analysis in academic and professional contexts. The emotional control dimension, for its part, reached 72.2% at a high level, pointing to strengths in problem management and resolution as well as in emotional self-regulation.

These results align with Zepeda-Hurtado et al. (2019), who argue that collaborative competencies tend to develop more readily in engineering programs given the hands-on, group-based nature of their training processes. Fuentes et al. (2021) likewise point out that teamwork and effective communication tend to take hold more consistently in university settings where active methodologies and collaborative learning dynamics are in place.

The findings on cognitive competencies further show that students possess strengths in critical thinking and decision-making, both central to industrial engineering training. Although the emotional control dimension generally showed high levels, some students fell into the medium or low range, a pattern consistent with Coronado-Maldonado and Benítez-Márquez (2023), who note that socioemotional competencies require deliberate educational effort and do not always develop spontaneously in technically oriented academic settings.

These results suggest that although industrial engineering students tend to display well-developed soft skills, strengthening capacities related to interpersonal interaction, critical thinking, and emotional control remains a key part of the university experience, particularly in programs aimed at holistic training and professional effectiveness within complex organizational settings.

Figure 2. *Percentage distribution of academic-skill development levels among Industrial Engineering students.*



Note. Authors' own elaboration based on the results obtained from the questionnaire administered to Industrial Engineering students.

The descriptive results showed favorable levels of academic skills among Industrial Engineering students, as illustrated in Figure 2. Regarding preparation for research and professional development, 71.0% of students reported that they almost always or always consider the skills acquired during their studies to contribute to their academic and professional growth. Similarly, 71.0% indicated that they almost always or always manage to apply theoretical knowledge to practical situations in academic settings.

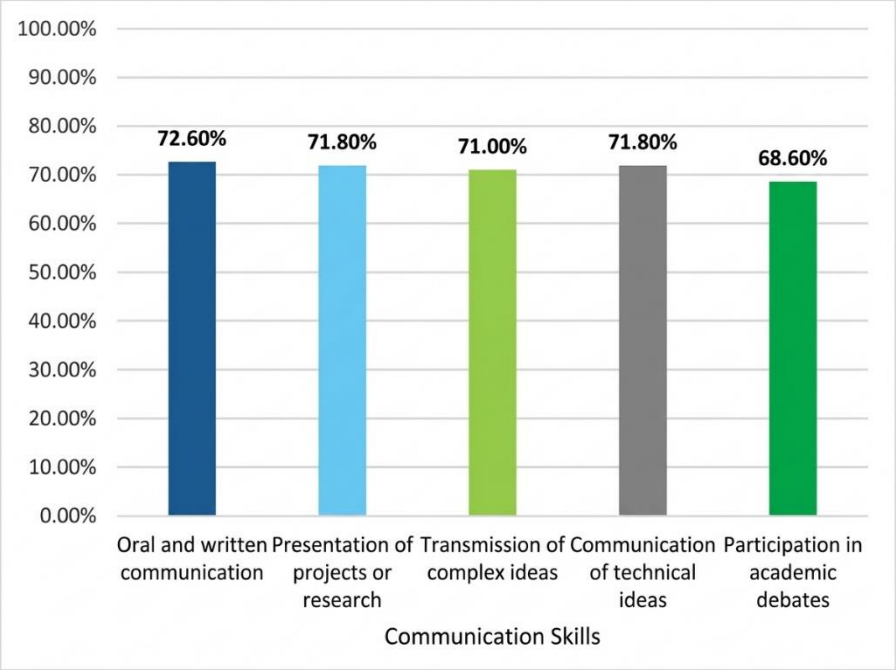
Likewise, 70.9% reported that they almost always or always have developed critical analysis skills for interpreting and evaluating academic information. Overall, the results point to a predominance of favorable levels in capacities related to critical thinking, the practical application of knowledge, and academic strengthening throughout the university training process.

This consistency between strengthened academic skills and professional development supports Abreu Tejada et al. (2022), who emphasize that curricular relevance is reinforced when academic training aligns with the competencies demanded by the professional and productive environment.

The predominance of favorable levels in applying theoretical knowledge and critical analysis also confirms González-Hernández and Granillo-Macías (2020), who maintain that training engineers for Industry 4.0 contexts requires integrating technical capabilities with cognitive skills geared toward analysis, problem-solving, and decision-making within dynamic, complex environments.

Even so, while the results point to predominantly favorable behavior in academic skills, a group of students still falls into the medium and low ranges, particularly regarding research and critical analysis. This finding points to the need to keep strengthening pedagogical strategies aimed at reflective thinking, applied research, and the consolidation of academic competencies within the university curriculum,, consistent with Salguero Barba and García Salguero (2024), who argue that certain formative and socioemotional capacities may fail to develop fully unless they are deliberately built into structured educational processes.

Figure 3. *Percentage distribution of communication-skill development levels among Industrial Engineering students.*



Note. Authors' own elaboration based on the results obtained from the questionnaire administered to Industrial Engineering students.

The descriptive results showed favorable levels of communication skills among Industrial Engineering students, as shown in Figure 3. Some 72.6% of students reported that they almost always or always manage to communicate clearly and effectively in academic and professional settings, while 71.8% said they feel equipped to present projects or research and to convey technical ideas appropriately.

Likewise, 71.0% indicated that they almost always or always manage to convey complex ideas in an understandable way, while 68.6% reported feeling able to participate actively in academic debates and discussions. Overall, the results reflect a predominance of favorable levels in capacities related to oral and written communication, academic argumentation, and the transmission of knowledge within the university context.

These results are consistent with Zepeda-Hurtado et al. (2019), who argue that communication and collaborative competencies tend to strengthen in engineering programs given the hands-on, group-based nature of their training processes. Fuentes et al. (2021) similarly note that implementing active methodologies favors the development of capacities related to effective communication, collaborative work, and the presentation of ideas within university settings.

Similarly, the results reveal strengths in conveying technical ideas and in academic participation, aligning with González-Hernández and Granillo-Macías (2020), who argue that training the modern engineer requires integrating technical skills with communication capabilities in order to function effectively within dynamic, multidisciplinary organizational settings.

Even so, while the results point to a predominance of favorable levels in communication skills, some students still fall into the medium and low ranges, especially with regard to participating in academic debates and presenting projects. This finding points to the need to strengthen pedagogical strategies aimed

at academic communication, technical argumentation, and professional development throughout university training.

Inferential analysis

Regarding the normality of the data, the Kolmogorov-Smirnov test was used to assess the distribution of the variables related to soft skills and academic competencies. The results showed significance values below 0.05 ($p = .000$), indicating that the data did not follow a normal distribution. Spearman's rho correlation coefficient was therefore applied to test the study's hypotheses, focusing specifically on the relationships among soft skills, academic skills, and communication skills.

Table 1. *Relationship between soft skills and academic competencies.*

Variables	**Spearman Rho**	**Two-tailed Sig.**
Soft skills – Academic skills	0.713	0.000
Soft skills – Communication skills	0.621	0.000

Note. Correlations are statistically significant at the 0.01 level.

The inferential analysis revealed a strong positive correlation between behavioral and academic competencies among industrial engineering students. Spearman's rho reached 0.713, with a statistical significance level below .001, indicating that students with more developed behavioral competencies also tended to achieve better academic outcomes. Skills such as interpersonal interaction, critical thinking, and emotional control, in particular, may facilitate progress through the curriculum and contribute to more effective engagement in the educational process. Given the correlational nature of the study, however, these results reflect an association between the variables rather than a causal relationship.

As for communication skills, a moderate-to-strong positive correlation was observed with behavioral competencies (*soft skills*). The resulting coefficient was 0.621, with a statistical significance level below .001. This finding indicates that individuals with higher scores in behavioral competencies also demonstrated stronger communication skills. The relationship is especially evident in the ability to articulate ideas clearly, present technical content, take part in academic debates, and explain projects or research findings. These skills matter throughout the university experience and take on particular importance in the professional practice of industrial engineering, a field in which communication typically occurs among people with differing knowledge, responsibilities, and perspectives.

The results concerning academic skills were consistent with Castillo Elizondo et al. (2018), who highlighted leadership and decision-making capacity among the competencies that accompany the development of academic and professional skills in engineering students. Rosas et al. (2022) likewise argued that analytical and cognitive skills enhance student performance throughout industrial engineering studies. This convergence of findings suggests that academic success depends not only on command of technical content but also on the personal and interpersonal resources students draw on to analyze situations, organize their activities, and meet curricular requirements.

The observed link between behavioral competencies (soft skills) and communication skills aligns with Hernández Herrera and Neri Torres (2020), who hold that effective communication, collaborative work, and argumentation skills play a cross-cutting role in university students' academic and professional performance. In the present study, this relationship is especially significant, since future industrial engineers must communicate technical information, justify their decisions, and coordinate actions across diverse work groups. Communication skills should therefore not be regarded as an isolated element of professional

training but rather as a competency that complements the application of specialized knowledge in both academic and workplace settings.

While the associations involving emotional mastery and communication were statistically significant, their magnitude was smaller than that observed for academic competencies. This may be explained by the fact that socioemotional skills do not always translate directly into academic outcomes; rather, they operate through self-regulation, interactions with others, and responses to challenging situations. Lago and Rivadeneira (2025) noted that such competencies tend to relate indirectly to academic and professional performance, particularly in complex educational and organizational settings. This interpretation should nonetheless be treated with caution, since the study's protocol did not allow for identifying the underlying mechanisms or determining the direction of the observed relationships.

Summary of findings

Overall, the results showed that cross-cutting competencies were significantly associated with the academic competencies of the students studied. This relationship was stronger with respect to academic competencies and moderately strong for communication skills, underscoring the complementarity between technical training and socioemotional development. Santillán Espinoza et al. (2025) proposed a holistic approach to higher education in which these capacities are fundamental to student development. From this perspective, integrating them into the curriculum could be achieved through pedagogical activities that foster critical analysis, cooperation, communication, and responsible emotional management.

These findings provide empirical evidence on the link between cross-cutting competencies and academic training among Peruvian industrial engineering students. Their main contribution lies in examining this relationship during the program's final term, a stage at which students are about to enter the labor market in full. The results can help guide the revision of teaching strategies and curricular alignment, although they should be interpreted with the specific context of the institution studied in mind. Accordingly, the evidence obtained cannot be automatically generalized to all universities, nor does it support the claim that soft skills, on their own, produce stronger academic competencies.

Conclusions

The results support the conclusion that there was a high, statistically significant positive relationship between soft skills and academic skills among the Industrial Engineering students at the university studied (Rho = 0.713; $p < .001$). Students with higher levels of soft skills also tended to achieve better scores in the academic dimension. This finding underscores the importance of considering interpersonal, cognitive, and emotional capacities as factors linked to university training. The correlational and cross-sectional nature of the study, however, precluded establishing a cause-and-effect relationship.

A moderate-to-strong positive relationship was also found between soft skills and communication skills (Rho = 0.621; $p < .001$). Students with higher soft-skill scores tended to show stronger capacities for communicating ideas, presenting technical content, engaging in academic activities, and relating to others. This association indicates that communication is a relevant component of industrial engineers' preparation. The results, however, describe the joint behavior of the variables and do not demonstrate that one caused changes in the other.

Based on these findings, it seems worthwhile to strengthen the presence of soft skills in university training through strategies integrated with the program's own content. Collaborative activities, reasoned problem-solving, project presentations, and spaces for reflection could support the joint exercise of critical thinking, communication, and emotional control. This recommendation does not imply replacing technical preparation but rather complementing it with the capacities needed to meet academic and professional demands. Its implementation should be tailored to the graduate profile and to the particular characteristics of the program studied.

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References

Abreu Tejada, M. K., Vallejo-Ruiz, M., & del Cerro Velázquez, F. (2022). Valoración de la pertinencia del currículo de la carrera de ingeniería industrial con relación al mercado laboral. *Universidad, Ciencia y Tecnología, 26*(116). https://doi.org/10.47460/uct.v26i116.642

Acuña Vásconez, N. P., Navarrete Acuña, M. A., & Navarrete Herrera, M. M. (2024). Integración de las habilidades blandas y su impacto laboral en los estudiantes de educación superior en el periodo 2023–2024. *Ciencia Latina Revista Científica Multidisciplinar, 8*(3), 7627–7643. https://doi.org/10.37811/cl_rcm.v8i3.11958

Álvarez Bautista, M. R. (2005). Panorama laboral del ingeniero industrial egresado de universidades ubicadas en el departamento de Lima-Perú [Tesis de grado, Universidad Nacional Mayor de San Marcos]. *Repositorio UNMSM*. https://hdl.handle.net/20.500.12672/1643

Caballero Meneses, S. Y., Vergara Causo, E. S., Gardi Melgarejo, V., & Rodriguez-Barboza, J. R. (2026). Metodologías activas en la educación latinoamericana: Una revisión sistemática sobre su impacto en el aprendizaje significativo. *Revista InveCom, 6*(2). https://doi.org/10.5281/zenodo.16076292

Castillo Elizondo, J. A., Álvarez Aguilar, N. T., & Treviño Cubero, A. (2018). El liderazgo como objeto de formación en los estudiantes de ingeniería. *Espirales Revista Multidisciplinaria de Investigación, 2*(23). https://doi.org/10.31876/re.v2i23.398

Coronado-Maldonado, I., & Benítez-Márquez, M. D. (2023). Emotional intelligence, leadership, and work teams: A hybrid literature review. *Heliyon, 9*(10), e20356. https://doi.org/10.1016/j.heliyon.2023.e20356

Estrella Romero, V. A., Jimbo Román, F. M., & Egas Villafuerte, V. P. (2024). Efectos de actividades gamificadas en el fortalecimiento de competencias de lecto-escritura en estudiantes de quinto grado de educación básica. *Sapiens in Education, 1*(1), 1-17. https://dialnet.unirioja.es/servlet/articulo?codigo=10163476

Fuentes, G. Y., Moreno-Murcia, L. M., Rincón-Téllez, D. C., & Silva-García, M. B. (2021). Evaluación de las habilidades blandas en la educación superior. *Formación Universitaria, 14*(4). https://doi.org/10.4067/S0718-50062021000400049

González-Hernández, I. J., & Granillo-Macías, R. (2020). Competencias del ingeniero industrial en la industria 4.0. *Revista Electrónica de Investigación Educativa*, 22, e30. https://doi.org/10.24320/redie.2020.22.e30.2750

Hernández Herrera, C. A., & Neri Torres, J. C. (2020). Las habilidades blandas en estudiantes de ingeniería de tres instituciones públicas de educación superior. *RIDE, Revista Iberoamericana para la Investigación y el Desarrollo Educativo, 10*(20). https://doi.org/10.23913/ride.v10i20.678

Lago, A., & Rivadeneira, L. (2025). Inteligencia emocional y liderazgo en empresas iberoamericanas: Una revisión sistemática de literatura. *Reincisol, 4*(8), 68–97. https://doi.org/10.59282/reincisol.v4i8.68-97

Luey Garcia, A. M. (2025). Habilidades Blandas y Gamificación: Análisis Sistemático en la Formación y Práctica de Ingeniería de Software. *Sapiens EduTech Journal, 3*(5), 1-10. https://doi.org/10.71068/f76khw54

Mayorga-Ases, M., Tagua-Moyolema, A., Muyulema-Muyulema, D., & Velastegui-Hernández, R. (2024). Estudio sobre la implementación de metodologías activas en la educación superior: Beneficios y desafíos. *593 Digital Publisher CEIT, 9*(4-1), 196–208. https://doi.org/10.33386/593dp.2024.4-1.2739

Rivera Terán, A., Hernández Rodríguez, P. V., & Rodríguez Menchaca, G. (2023). Análisis de los perfiles de ingreso y egreso de la licenciatura de ingeniería industrial en las instituciones de educación superior en Reynosa, Tamaulipas. *Multidisciplinas de la Ingeniería, 2*(2), 17–25. https://doi.org/10.29105/mdi.v2i02.34

Rosas, L. F., Quintero Fuentes, M. P., Ramírez, J. H., Torres López, M. T., & Pérez, M. G. (2022). La influencia de las habilidades blandas en la inserción laboral de egresados de ingeniería industrial del Tecnológico Nacional de México Campus Tierra Blanca. *European Scientific Journal, 7*(1), 372. https://eujournal.org/index.php/esj/article/view/15571

Salas Díaz, R. J., & Baque Pibaque, L. M. (2025). Estrategias motivacionales docentes y la formación profesional en los estudiantes de educación superior de una universidad ecuatoriana. *Sapiens in Higher Education, 2*(5), 1-15. https://doi.org/10.71068/c3e6w607

Salguero Barba, N. G., & García Salguero, C. P. (2024). Inteligencia emocional y liderazgo en las organizaciones. *LATAM Revista Latinoamericana de Ciencias Sociales y Humanidades, 5*(6), 44–53. https://doi.org/10.56712/latam.v5i6.2990

Santillán Espinoza, D. I., Reinoso Muñoz, G. G., Morales León, V. B., & Minga León, F. E. (2025). Habilidades blandas para una educación superior desde la perspectiva holística. *Revista de Ciencias Sociales*, 31, 379–394. https://doi.org/10.31876/rcs.v31i.44571

Vega Calvas, P. A., Gómez Vargas, M. E., Guamán Bastidas, M. A., & Narváez Ochoa, A. del P. (2025). Liderazgo transformacional y su influencia en la innovación académica en instituciones de educación superior. *Sapiens in Higher Education, 2*(5), 1-13. https://doi.org/10.71068/6t2jwv06

Williams, C., López-Enrambasaguas, O. M., Cayul, E., & Goset-Poblete, J. (2024). Impacto de las metodologías activas en las estrategias de aprendizaje de estudiantes del área de la salud de primer año en la Universidad Finis Terrae. *Revista Médica Clínica Las Condes, 35*(5–6), 385–392. https://doi.org/10.1016/j.rmclc.2024.02.004

Zepeda-Hurtado, M. E., Cardoso-Espinosa, E. O., & Rey-Benguría, C. (2019). El desarrollo de habilidades blandas en la formación de ingenieros. *Científica, 23*(1). https://doi.org/10.46842/ipn.cien.v23n1a07

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