

Social skills identified with areas of opportunity in the student body of the Universidad Tecnológica de León**Habilidades sociales identificadas con áreas de oportunidad en el estudiantado de la Universidad Tecnológica de León**

PADILLA-GUTIÉRREZ, Luz Aurora^{†*}, ARREDONDO-MUÑOZCANO, Ana María, GONZÁLEZ-ARREDONDO, Liliana and HERNÁNDEZ-CASTILLO, Adolfo

Universidad Tecnológica de León, México.

1st Author: *Luz Aurora, Padilla-Gutiérrez* / ORC ID: 0000-0003-4183-8777, CVU CONAHCYT ID: 1014262 ID

ID 1st Co-author: *Ana María del Carmen, Arredondo-Muñozcano* / ORC ID: 0000-0001-7252-6894, CVU CONAHCYT ID: 1014278

ID 2nd Co-author: *Liliana, González Arredondo* / ORC ID: 0000-0002-1692-9602, Researcher ID: S-8366-2018, CVU CONAHCYT ID: 563829

ID 3rd Co-author: *Adolfo, Hernández-Castillo* / ORC ID: 0000-00003-2105-1846, CVU CONAHCYT ID: 1014136

DOI: 10.35429/JTMS.2023.24.9.22.32

Received: January 20, 2023; Accepted: June 30, 2023

Abstract

The present investigation helped to identify the social skills that need to be reinforced in the students of the period January-April 2023 of the Technological University of León, (UTL) through the Goldstein evaluation instrument, with responses on the Likert scale. The survey was adapted in the UTL Virtual Classroom and applied to 2,394 students representing 70% of the TSU level population. The analysis of the skills with the lowest score was carried out by crossing the information with the career, after which the general analysis of each skill was carried out with respect to the sociodemographic data. The skills and careers that require further reinforcement were identified. The results contribute to the subsequent design of strategies that help students to improve in all skills, emphasizing the lowest ones. Other investigations in this regard were analyzed, resulting in similarities in the behavior of the student body according to the age or stage they are living.

Resumen

La presente investigación ayudó a identificar las habilidades sociales que requieren ser reforzadas en el estudiantado del periodo enero-abril 2023 de la Universidad Tecnológica de León, (UTL) a través del instrumento de evaluación de Goldstein, con respuestas en escala Likert. Se adaptó la encuesta en el Aula Virtual de la UTL y se aplicó a 2394 estudiantes que representan el 70% de la población de nivel TSU. Se realizó el análisis de las habilidades con menor puntuación cruzando la información con la carrera, posterior se realizó el análisis general de cada habilidad respecto a los datos sociodemográficos. Se identificaron las habilidades y carreras que requieren mayor reforzamiento. Los resultados contribuyen a que posteriormente se diseñen estrategias que ayuden al estudiantado a mejorar en todas las habilidades, poniendo énfasis en las más bajas. Se analizaron otras investigaciones al respecto, dando como resultado similitudes en el comportamiento del estudiantado de acuerdo con la edad o etapa que están viviendo.

Social skills, feelings, student body

Habilidades sociales, sentimientos, estudiantado

Citation: PADILLA-GUTIÉRREZ, Luz Aurora, ARREDONDO-MUÑOZCANO, Ana María, GONZÁLEZ-ARREDONDO, Liliana and HERNÁNDEZ-CASTILLO, Adolfo. Social skills identified with areas of opportunity in the student body of the Universidad Tecnológica de León. *Journal of Transdisciplinary Migratory Studies*. 2023. 9-24:22-32.

* Correspondence to the Author (E-mail: apadilla@utleon.edu.mx)

† Researcher contributing as first author.

Introduction

The Technological Universities in Mexico were created under an intensive system so that the students have a quick insertion in the productive and service sector, which, according to the region, determines the careers that are required (Vázquez, 2016). The effectiveness of the curricula of each degree programme is constantly evaluated with the Situational Analyses of Work (AST) that are carried out with employers in the region and teachers at the university; in the AST, information is gathered regarding the labour competences, psychomotor, cognitive and socio-affective skills that graduates require to comply with the standards currently required in their professional work (González, 2016).

With regard to socio-affective skills, in the ASTs carried out between 2020 and 2021, it was identified that the two competences that have been most required by employers in the region for many years are teamwork and leadership (Hernández-Castillo et al., 2022), for which the development of social skills is fundamental (Tolentino Quiñones, 2020). The fact that these socio-affective competences are the most in demand reflects the problem that concerns us: that training in the management of social skills has not been effective among UTL students.

This is why it was decided to carry out a Likert scale diagnosis based on the instrument developed by Goldstein (1989) on the students of the Universidad Tecnológica de León, at the Higher Technical University level in the period January - April 2023, referring to how they perceive themselves in social skills, with the hypothesis that the social skills related to feelings are those that are in the category of deficient or low and therefore have the most areas of opportunity.

The analysis is based on the quantitative results obtained from the students' responses in each of the fifty skills that were evaluated, which are also organised into six groups. The variables of gender, term, shift, area and career were also taken into account.

The survey made it possible to identify not only the social skills most in need of reinforcement, but also the career in which the students who require support in this area are located.

As a result of these results, one of the actions derived from the analysis was to design a proposal for the period May-August 2023 and 2024, for students who are in the process of their stay in companies, which is the equivalent of professional practices, in addition to carrying out actions in the Planning of the subject of Socio-cultural Training. The purpose of the workshops is to accompany students so that they can recognise real contexts in which they need and know how to manage social skills that will enable them to perform effectively in the organisation.

The article is structured with a theoretical framework that supports the identification of the importance of social skills in the university, work and social context, briefly explaining what social skills are and the justification of the instrument used for this research. This is followed by the methodology used, analysis of the results and finally the references that support the research.

Theoretical framework

The challenges facing higher education in Mexico are great; the vocational training model in its scientific and technological fields of knowledge must consider the trend towards the human, focusing more attention on the teaching of total values, which will allow society to respect life in society and recognise that we all have rights and obligations to fulfil.

Education with a focus on competences consists of a set of knowledge, skills, attitudes and strategies that enable students to contribute to the construction of a more just and peaceful society, based on their effective performance in the world of work (Trujillo-Segoviano, 2014). Comprehensive education is, in reality, an education with a focus on competences, where there must be a balance between theoretical, practical and attitudinal knowledge. In fact, it is precisely the attitudinal aspects that become the competitive advantage in a world of work in which there is more and more knowledge and technical skills, however, the need for better people must be emphasised.

Within school education, one of the attitudinal aspects that best contributes to the formation of better people is precisely the knowledge and mastery of social skills, as these allow human beings to relate and communicate effectively with others. (Acosta-Luis et al, 2020).

Social and interpersonal communication skills have to do with everything that people do with each other and in groups to share information, comment and/or explain about something or about themselves; this involves behavioural, personal and situational aspects. Communication considers not only verbal aspects, but also non-verbal and cognitive aspects, all of which are important for integral development. The person with a good management of their social and communication skills will be able to integrate effectively into the labour and professional world. (Flores Mamani et al, 2016).

Social skills

These are a set of behaviours that allow the person to interact assertively with others, expressing their desires, needs, opinions in an appropriate manner, achieving a socially competent performance, respecting or caring for the rights of their interlocutor and themselves, according to the context or situation they are living and achieving a positive impact and reducing a negative one (Morán, 2014).

Teamwork and leadership require people who are competent in social skills, as this helps to have appropriate relationships, where the achievement of objectives and goals for all is sought.

Social skills must be reflected upon according to the context, considering factors such as age, gender, social status or defining whether a behaviour is appropriate or not (Caballo, 2007).

On the other hand, there are other theoretical models analysed by Moran (2014), such as the Big Five Factor Model, Costa and Mc Crae, who observe social skills with an approach linked to the study of personality structure; they consider that the different forms of behaviour are due to the circumstances and/or situations that arise and personality traits, such as, for example, extroversion. The work of other authors such as Salovey and Carusso, Mayer and Goleman, refer to social skills as something that originates according to the individual's abilities to perceive, use, understand and manage their own emotions and those of others; what is known today as Emotional Intelligence (EI). (Morán, 2014 and Fernández-Berrocal, 2005).

In this same context Betina (2011), mentions Fernández Ballesteros, who directly relates social skills from a behavioural model based on the analysis of behaviour, the environment in which it takes place, personal variables (cognitions, beliefs, among others) and their interaction (Betina, 2011). (Betina, 2011).

Methodology

Goldstein's diagnosis of social skills

The present work is an exploratory study whose quantitative information was obtained by means of the survey technique through the virtual classroom of the UTL. The second, fifth and eighth semester students of the Higher Technical University level participated in the survey.

To carry out the diagnosis, questions were used based on the list of social skills proposed by Goldstein (1989), which are classified into six groups (Table 1). For each question, the response options were formulated on a Likert scale: Never, Almost never, Occasionally, Almost always and Always. The structure of the instrument is as follows:

Group I. First skills (8 questions).

Group II. Advanced social skills (6 questions).

Group III. Skills related to feelings (7 questions).

Group IV. Alternative skills to aggression (9 questions).

Group V. Stress coping skills (12 questions).

Group VI. Planning skills (8 questions).

Group I. First skills
1. Listening
2. Initiating conversation
3. Maintaining a conversation
4. Asking questions
5. Saying thank you
6. Introduce yourself
7. Introducing other people
8. Paying a compliment
Group II. Advanced social skills
9. Asking for help
10. Participating
11. Giving instructions
12. Following instructions
13. Apologising
14. Convincing others
Group III. Skills related to feelings
15. Knowing one's own feelings
16. Expressing feelings
17. Understanding other people's feelings
18. Coping with another's anger
19. Expressing affection
20. Resolving fear
21. Self-reward
Group IV. Alternative skills to aggression
22. Asking permission
23. Sharing something
24. Helping others
25. Negotiate
26. Using self-control
27. Stand up for one's rights
28. Respond to jokes
29. Avoid problems with others
30. Not getting into fights
Group V. Coping with stress
31. Formulate a complaint
32. Responds to a complaint
33. Demonstrates sportsmanship after a game.
34. Resolve embarrassment
35. Deal with being left out.
36. Standing up for a friend
37. Respond to persuasion
38. Responding to failure
39. Responding to contradictory messages
40. Responding to an accusation
41. Preparing for a difficult conversation
42. Coping with peer pressure
Group VI. Planning skills
43. Taking initiatives
44. Discerning about the cause of a problem
45. Set a goal
46. Determine one's skills
47. Collect information
48. Solve problems according to their importance
49. Make a decision
50. Concentrate on a task

Table 1 Social skills groups

Source: (Goldstein, 1989)

Application of the instrument

The diagnostic instrument was programmed in the virtual classroom platform of the Universidad Tecnológica de León and was applied in the period January-April 2023, to students belonging to the student body of the 2nd, 5th and 8th semesters of the Higher University Technician level.

The student population of the Universidad Tecnológica de León in the period January-April 2023 was 3397 students, of which 2394 responded to the survey, representing 70.4% of the total student body.

Quantitative results by variable

Gender: there were 1267 males corresponding to 52.9% of the sample, 1118 females representing 46.7% and 9 participants who mentioned that they did not feel identified with any gender, representing 0.04%, as shown in Table 2.

genre	Respondents	Percentage
Men	1267	52.9%
Women	1118	46.7%
Not identified	9	0.4%
Total	2394	100%

Table 2 Respondents by gender

Ages: ages range from 17 to 30 years and over, with students between 18 and 21 years having the highest participation with 86% of the population, as shown in Table 3.

Age	Respondents	Percentage
17	24	1%
18	669	28%
19	667	28%
20	450	19%
21	260	11%
22	129	5%
23	79	3%
24	53	2%
25	15	1%
26	11	0%
27	16	1%
28	4	0%
29	3	0%
30 o more	14	1%
Total	2394	100%

Table 3 Respondents by age

Second semester: Table 4 shows that 1469 respondents participated in the second semester, which corresponds to 61% of the sample. In the fifth term, 851 students answered the survey, representing 36% of the sample. In the case of the eighth semester, 74 students took part in the survey, representing 3%.

four-month period	Respondents	Percentage
Second	1469	61%
Fifth	851	36%
Eighth	74	3%
Total	2394	100%

Table 4 Respondents by four-month period

Shift: the highest participation was from the morning shift with 2052 students, which corresponds to 86% of the surveyed population, and from the afternoon shift with 342, representing 14%. It is worth noting that the morning shift has a larger student population of Higher University Technicians than the afternoon shift.

Shift	Respondents	Percentage
Morning	2052	86%
Afternoon	342	14%

Table 5 Respondents by shift

Areas: UTL is currently divided into two areas, Administrative Economics and Emerging Industrial and Information Technologies, and the participation of both was proportional.

Areas	Respondents	Percentage
Economic	1114	47%
Emerging Industrial Technologies and Informatics	1280	53%
Total	2394	100%

Table 6 Respondents by Area

Career: 17 careers participated, Table 7 shows the percentage of participation in each one, it should be noted that those with the largest population are the five that make up the Economic-Administrative area, which are the first to appear.

Career	Respondents	Percentage
Administration	333	13.9%
Business Development	297	12.4%
Gastronomy	184	7.7%
Logistics	120	5.0%
Tourism	180	7.5%
Software Development	232	9.7%
Virtual Environments	135	5.6%
Network Infrastructure	59	2.5%
Footwear Management	15	0.6%
Maintenance	73	3.0%
Flexible Manufacturing	215	9.0%
Mechatronics	17	0.7%
Optomechatronics	94	3.9%
Automotive Processes	147	6.1%
Manufacturing Processes	112	4.7%
Production Processes	20	0.8%
Chemistry	161	6.7%
Total	2394	100%

Table 7 Respondents by career

Interpretation of the results

The analysis of the results was carried out in two ways: one to identify the level of mastery specifically by skill, and the other by group of skills.

For social skills, the results were obtained according to the alternatives provided by the Likert scale, where all the options grouped by the same value in the group were added up and, according to Table 8, the values were assigned, converting them as follows:

Group	Number of questions	Number of questions Score according to the Likert scale				
		5 points Always = Excellent	4 points Almost always = Good	3 points Occasionally = Regular	2 points Hardly ever = Bajo	1 point Never = Poor
1	8	5x8=40 Range: 35-40	4x8=32 Range: 28-34	3x8=24 Range: 21-27	2x8=16 Range: 14-20	1x8=8 Range: 8-13
2	6	6x5=30 Range: 27-30	6x4=24 Range: 22-26	6x3=18 Range: 17-21	6x2=12 Range: 12-16	6x1=6 Range: 6-11
3	7	7x5=35 Range: 30-35	7x4=28 Range: 24-29	7x3=21 Range: 18-23	7x2=14 Range: 12-17	7x1=7 Range: 7-11
4	9	9x5=45 Range: 39-45	9x4=36 Range: 32-38	9x3=27 Range: 22-31	9x2=18 Range: 16-21	9x1=9 Range: 9-15
5	12	12x5=60 Range: 51-60	12x4=48 Range: 41-50	12x3=36 Range: 31-40	12x2=24 Range: 21-30	12x1=12 Range: 12-20
6	8	5x8=40 Range: 35-40	4x8=32 Range: 28-34	3x8=24 Range: 21-27	2x8=16 Range: 14-20	1x8=8 Range: 8-13

Table 8 Scores according to the Likert scale

Results

For the analysis of the results, we first identified the level of mastery by specific social skill, according to the students' perception.

With regard to the level of mastery of social skills, those that were below 3 points were considered for the analysis, as the aim is to identify skills that the students perceive as low or deficient. If the result is 1, it is considered a deficient skill; 2 refers to a low skill; 3 is a fair skill; 4 is good and 5 is excellent.

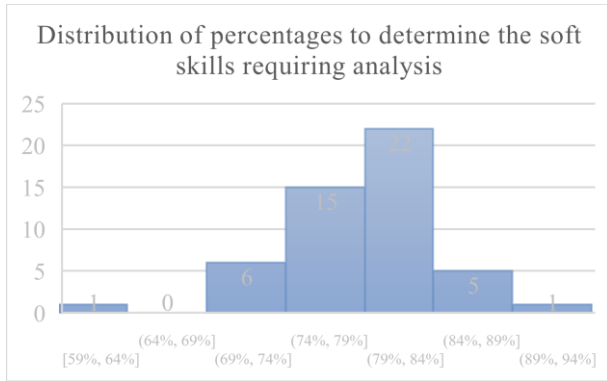
Quantitative analysis by social skills

The results of the skills were ordered from lowest to highest average and converted into percentages for greater clarity, where 100% is excellent and corresponds to 5.

Group	Social skills	Average	Percentage
3	16. Expressing feelings	2.96	59%
5	35. Coping with being pushed aside	3.57	71%
1	2. Initiate conversation	3.57	71%
1	7. Introducing other people	3.61	72%
3	20. Resolving fear	3.65	73%
5	34. Resolving shame	3.66	73%
6	49. Make a decision	3.67	73%
2	14. Convincing others	3.70	74%
1	6. Introducing yourself	3.71	74%
2	9. Asking for help	3.78	76%
5	39. Dealing with conflicting messages	3.81	76%
4	26. Using self-control	3.82	76%
5	31. Formulate a complaint	3.82	76%
2	10. Participate	3.83	77%
1	3. Hold a conversation	3.83	77%
3	21. Self-reward	3.84	77%
6	43. Take initiatives	3.86	77%
4	25. Negotiate	3.88	78%
5	38. Respond to failure	3.91	78%
5	32. Respond to a complaint	3.94	79%
2	11. Give instructions	3.94	79%
3	15. Know one's own feelings	3.94	79%
3	19. Expressing affection	3.95	79%
6	47. Gathering information	3.96	79%
3	18. Coping with the anger of another	3.96	79%
6	50. Concentrating on a task	3.97	79%
4	23. Sharing something	4.01	80%
1	4. Asking questions	4.02	80%
1	8. Paying a compliment	4.03	81%
5	42. Coping with peer pressure	4.04	81%
4	28. Responding to jokes	4.05	81%
6	44. Discerning about the cause of a problem	4.06	81%
5	33. Demonstrating sportsmanship after a game	4.08	82%
5	40. Respond to an accusation	4.08	82%
5	41. Prepare for a difficult conversation	4.08	82%
6	46. Determining one's own abilities	4.09	82%
5	36. Standing up for a friend	4.09	82%
6	48. Solve problems according to their importance	4.09	82%
4	27. Stand up for one's rights	4.10	82%
3	17. Understand the feelings of others	4.13	83%
4	29. Avoiding problems with others	4.14	83%
6	45. Setting a goal	4.14	83%
5	37. Respond to persuasion	4.15	83%
4	30. Not getting into fights	4.18	84%
4	24. Help others	4.20	84%
2	12. Follow instructions	4.20	84%
2	13. Apologise	4.26	85%
4	22. Asking permission	4.30	86%
1	1. Listen	4.38	88%
1	5. Saying thank you	4.67	93%

Table 9 Average and percentage by social skill

It was found that, of the 50 skills analysed, only one is in the range below 3 or less than 60%. To identify which other skills are concentrated in a similar range, a histogram was made to see the distribution of the percentages, obtaining the following distribution.



Graphic 1 Distribution of percentages to determine the social skills requiring analysis

It was identified that the skills requiring more detailed analysis were those found in a range of less than 74%, as indicated by the histogram in the distribution of percentages (graph 1).

The skills found in the range of 59% to less than 74%, that is, deficient or low, are the first seven skills indicated in Table 10.

Group	Social skills	Average	Percentage
3	16. Expressing feelings	2.96	59%
5	35. Coping with being pushed aside	3.57	71%
1	2. Initiate conversation	3.57	71%
1	7. Introducing other people	3.61	72%
3	20. Resolving fear	3.65	73%
5	34. Resolving shame	3.66	73%
6	49. Make a decision	3.67	73%

Table 10 Social skills with lower scores

With this information, the hypothesis is not completely proven, since the other five skills that are related to feelings are very close to category 4 of Good, as shown in Table 11.

Group	Social skills	Average	Percentage
3	16. Expressing feelings	2.96	59%
3	20. Resolving fear	3.65	73%
3	21. Self-reward	3.84	77%
3	15. Knowing one's feelings	3.94	79%
3	19. Expressing affection	3.95	79%
3	18. Dealing with another's anger	3.96	79%
3	17. Understanding the feelings of others	4.13	83%

Table 11 Average and percentage of Social Skills related to feelings

If we analyse the social skills by group as a whole, we do have the lowest percentage, as can be seen in graph 2.

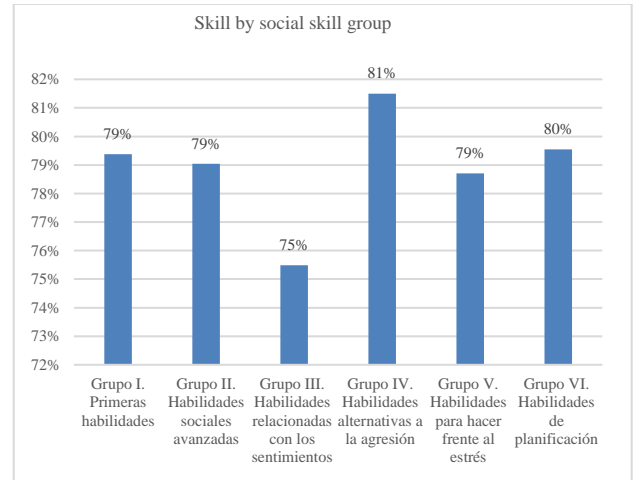


Figure 2 Proficiency by social skill group

Analysis by social skill correlating with the career path

The analysis of the seven skills with the greatest areas of opportunity is presented below, cross-referencing the information with the career variable, which will help to identify where the emphasis should be placed on reinforcement.

[For the analysis, a table of the totals was made, indicating the categories of Deficient (D), Low (B) and Regular (R), which were added together to identify the careers with the lowest scores, leaving the following nomenclature (D+B+R) for interpretation. Only the five lowest careers are shown for each of the seven skills that were analysed.

Skill 16. Expressing feelings										
Career	Deficient	Low	Regular	Good	Very Good	Excellent	Very Excellent	Outstanding	Superior	Outstanding
Production Processes	20	20%	45%	20%	5%	10%	100%	85%	15%	100%
Optomechatronics	94	20%	34%	30%	14%	2%	100%	84%	16%	100%
Virtual Environments	135	13%	41%	25%	16%	4%	100%	79%	21%	100%
Software Development	232	10%	30%	35%	13%	11%	100%	75%	25%	100%
Mechatronics	17	18%	18%	35%	18%	12%	100%	71%	29%	100%

Table 12 Lowest percentages by race in Skill 16. Expressing feelings.

Skill 35. Coping when left on the sidelines										
Career	Deficient	Low	Regular	Good	Very Good	Excellent	Very Excellent	Outstanding	Superior	Outstanding
Tourism	180	4%	14%	36%	24%	22%	100%	54%	46%	100%
Virtual Environments	135	7%	17%	28%	30%	18%	100%	53%	47%	100%
Logistics	120	5%	11%	35%	33%	16%	100%	51%	49%	100%
Administration	333	5%	14%	31%	31%	19%	100%	50%	50%	100%
Network Infrastructure	59	7%	19%	22%	34%	19%	100%	47%	53%	100%

Table 13 Lowest percentages by race in Skill 35. Coping with being left behind

Skill 2. Initiate a conversation										
Career	Respondents	Deficient	Under	Regular	Good	Excellent	Total	(D+B+R)	(B+E)	Total
Virtual Environments	135	5%	9%	46%	29%	11%	100%	60%	40%	100%
Software Development	232	0%	10%	44%	33%	12%	100%	55%	45%	100%
Production Processes	20	0%	15%	40%	30%	15%	100%	55%	45%	100%
Logistics	120	3%	5%	47%	33%	13%	100%	54%	46%	100%
Mechatronics	17	0%	6%	47%	24%	24%	100%	53%	47%	100%

Table 14 Lowest percentages by race in Skill 2. Initiating a conversation

Skill 49. Make a decision										
Career	Respondents	Deficient	Under	Regular	Good	Excellent	Total	(D+B+R)	(B+E)	Total
Virtual Environments	135	1%	12%	46%	35%	7%	100%	59%	41%	100%
Optomechatronics	94	7%	2%	44%	34%	13%	100%	53%	47%	100%
Software Development	232	1%	10%	37%	42%	9%	100%	49%	51%	100%
Tourism	180	3%	4%	39%	44%	9%	100%	47%	53%	100%
Logistics	120	1%	7%	37%	42%	14%	100%	44%	56%	100%

Table 18 Lowest percentages by race for Skill 49.

Skill 7. Introducing other people										
Career	Respondents	Deficient	Under	Regular	Good	Excellent	Total	(D+B+R)	(B+E)	Total
Virtual Environments	135	4%	15%	39%	25%	17%	100%	58%	42%	100%
Optomechatronics	94	2%	20%	30%	26%	22%	100%	52%	48%	100%
Logistics	120	1%	10%	40%	30%	19%	100%	51%	49%	100%
Production Processes	20	0%	20%	30%	35%	15%	100%	50%	50%	100%
Tourism	180	2%	9%	37%	35%	17%	100%	48%	52%	100%

Table 15 Lowest percentages by race in Skill 7. Introducing other people

According to the results of each of the skills analysed, Table 19 was made. Frequency of careers by low skills to identify which careers require greater support. It was found that Virtual Environments is the main one, as it appears in all the skills analysed, followed by Tourism, Logistics and Mechatronics, which appear 5 times out of 7; followed by Software Development with 4; Optomechatronics and Productive Processes on 3 occasions; and Administration with 2; and Network Infrastructure with 1.

Ability. 20. Resolving fear										
Career	Respondents	Deficient	Under	Regular	Good	Excellent	Total	(D+B+R)	(B+E)	Total
Mechatronics	17	6%	18%	41%	6%	29%	100%	65%	35%	100%
Optomechatronics	94	4%	18%	31%	26%	21%	100%	53%	47%	100%
Logistics	120	3%	18%	30%	33%	16%	100%	52%	48%	100%
Tourism	180	3%	13%	35%	37%	12%	100%	51%	49%	100%
Virtual Environments	135	4%	15%	29%	35%	18%	100%	47%	53%	100%

Table 16 Lowest percentages by race in Skill 20. Resolving fear

Career	Hab. 16	Hab. 35	Hab. 2	Hab. 7	Hab. 20	Hab. 34	Hab. 49	Frequency
Virtual Environments	1	1	1	1	1	1	1	7
Tourism		1		1	1	1	1	5
Logistics		1	1	1	1		1	5
Mechatronics	1		1	1	1	1		5
Software Development	1		1			1	1	4
Optomechatronics	1				1		1	3
Production Processes	1		1	1				3
Administration		1				1		2
Network Infrastructure		1						1

Table 19 Frequency of low-scoring careers by skills

Skill 34. Resolving shame										
Career	Respondents	Deficient	Under	Regular	Good	Excellent	Total	(D+B+R)	(B+E)	Total
Virtual Environments	135	4%	15%	30%	33%	18%	100%	50%	50%	100%
Mechatronics	17	0%	29%	18%	24%	29%	100%	47%	53%	100%
Tourism	180	6%	10%	31%	37%	17%	100%	47%	53%	100%
Software Development	232	2%	14%	31%	34%	20%	100%	47%	53%	100%
Administration	333	3%	11%	32%	34%	21%	100%	45%	55%	100%

Table 17 Lowest percentages by race in Skill 34. Resolving embarrassment

Analysis of results generally by socio-demographic data

An analysis was carried out with all socio-demographic data in general and the following information was identified:

Gender: people who do not identify with any gender are those who report the greatest need to strengthen social skills, followed by women and finally men, where there is no significant difference.

Gender	Deficient	Under	Regular	Good	Excellent	Total	
Men	52.9%	0.00%	0.47%	15.39%	55.88%	28.26%	100%
Women	46.7%	0.00%	0.63%	19.32%	55.55%	24.51%	100%
Not identified	0.4%	0.00%	0.00%	22.22%	55.56%	22.22%	100%

Table 20. General analysis of social skills by gender

Age: with a slightly greater need for reinforcement of social skills are those at the extremes; those under 17 years of age, who represent 1% of the population, and those over 26 years of age, who correspond to 2%.

Term: It is identified that students in the last four terms perceive themselves to be more confident in terms of their social skills. According to the results, the students surveyed in the second semester, who represent 61% of the sample surveyed, are the ones who need to reinforce their social skills the most, while those in the eighth semester say that they feel more confident in their social skills.

Four-month period	%	Deficient	Under	Regular	Good	Excellent	Total
Second	61%	0.00%	0.48%	18.92%	56.84%	23.76%	100%
Fifth	36%	0.00%	0.71%	15.16%	54.05%	30.08%	100%
Eighth	3%	0.00%	0.00%	8.11%	52.70%	39.19%	100%

Table 21 General analysis of social skills by four-month period

Area

The Technological University of Leon, is divided into two areas which are: Economic-Administrative and Emerging Industrial and Computer Technologies. Economic-Administrative is responsible for the careers of Administration, Business Development, Tourism, Gastronomy and Logistics. Emerging Industrial Technologies and Informatics is in charge of the rest of the careers such as: Virtual Environments, Software Development, Network Infrastructure, Mechatronics, Maintenance, Optomechatronics, Chemistry, Flexible Manufacturing, Automotive Processes, Production Processes, Manufacturing Processes and Footwear Management. According to the results, no relevant difference is detected, which is interesting, since it would be thought that Administrative Economics, being a humanities area, would have more developed skills; but, according to the results, there is no significant discrepancy.

Area	%	Deficient	Under	Regular	Good	Excellent
Economic-Administrative	47%	0%	1%	17%	57%	26%
Emerging Industrial Technologies and Computer Science	53%	0%	0%	18%	55%	27%

Table 22 General analysis of social skills by area

Career: in order to carry out the analysis by career, it was necessary to integrate the categories of deficient, low and fair, as this is what we are interested in analysing, and they were ordered according to the career that came out highest in these categories. In accordance with what was previously analysed of the skills compared with the careers, it coincides that the careers of Virtual Environments, Software Development, Network Infrastructure, Mechatronics, Logistics, Tourism, among others, are among the lowest in the categories of "soft skills", "soft skills", "soft skills", "soft skills", "soft skills", "soft skills", "soft skills", "soft skills", "soft skills" and "soft skills".

Career	Respondents	Deficient	Under	Regular	Good	Excellent	Total	(D+B+R)	(B+E)
Virtual environments	135	0%	0.74%	26%	59%	15%	100%	27%	73%
Software Development	232	0%	0.00%	26%	55%	19%	100%	26%	74%
Network Infrastructure	59	0%	0.00%	24%	53%	24%	100%	24%	76%
Mechatronics	17	0%	0.00%	24%	53%	24%	100%	24%	76%
Logistics	120	0%	0.83%	21%	60%	18%	100%	22%	78%
Tourism	180	0%	0.56%	21%	59%	20%	100%	21%	79%
Gastronomy	184	0%	2.17%	18%	58%	22%	100%	21%	79%
Maintenance	73	0%	0.00%	19%	45%	36%	100%	19%	81%
Optomechatronics	94	0%	1.06%	18%	59%	22%	100%	19%	81%
Administration	333	0%	0.60%	17%	53%	29%	100%	17%	83%
Chemistry	161	0%	0.00%	17%	51%	32%	100%	17%	83%
Flexible manufacturing	215	0%	0.47%	13%	54%	32%	100%	13%	87%
Business Development	297	0%	0.00%	12%	57%	31%	100%	12%	88%
Automotive Processes	147	0%	1.36%	9%	56%	34%	100%	10%	90%
Production Processes	20	0%	0.00%	10%	65%	25%	100%	10%	90%
Manufacturing Processes	112	0%	0.00%	9%	57%	34%	100%	9%	91%
Footwear Management	15	0%	0.00%	7%	67%	27%	100%	7%	93%

Table 23 Overall analysis of soft skills by career

Conclusions

Social skills are a fundamental part of developing professional competencies; therefore, and in accordance with the results obtained in this research, strategies should be implemented in most of the skills proposed by Goldstein, but with emphasis on the one that refers to expressing feelings, as this is the one that obtained the lowest performance of the fifty that were evaluated.

Knowing the level of development or competence of the social skills of the students of the Technological University of León will allow for the elaboration of strategies that will help them to improve their performance.

When comparing the information obtained with other similar studies, it can be seen that the social skills groups obtain similar results. Such is the case of the study conducted by Alquina and collaborators (2023), who found that, in high school students in Quito, Ecuador, they also need to reinforce skills related to feelings. In a similar situation are the results of Flores Lascano (2020), coinciding with the majority of skills that obtained low scores in Business Engineering students at the National Polytechnic School in Mexico. These results encourage us to reflect on whether these results are a consequence of our culture, of the pandemic situation that we have been experiencing since 2020, or whether it is a common behaviour in human beings who are at the university stage.

Sánchez and Ñañez (2022) identify that one strategy for the development of social skills is teamwork. According to their research, it was identified that social skills for the resolution of conflicts and the achievement of the objective were strengthened. This would be a good strategy to analyse, especially in the lower ranked careers and identify how they mainly work.

An important point to consider in these results is not to take for granted that this is the common behaviour in the careers that came out with low scores, it would be convenient to carry out this same study comparing one generation to another and corroborate if it is the context in which the students are currently or if it is common, in this way more effective strategies can be carried out.

References

Acosta Luis, D., Hernández Jara, P. V., y Onofre Zapata, V. D. R. (2020). Habilidades sociales y su impacto en la educación del individuo. *Magazine De Las Ciencias: Revista De Investigación E Innovación*, 5(CISE). <https://revistas.utb.edu.ec/index.php/magazine/article/view/1132>

Alquina Collaguazo N., Morales Fonseca, C., Abata Quispe, D. y Valencia Lescano, M. (2023). Desarrollo de habilidades sociales en estudiantes de segundo de bachillerato en una institución educativa de Quito – Ecuador. *Ciencia Latina, Revista Científica Multidisciplinar*, 7(1), 10542-10556 https://doi.org/10.37811/cl_rcm.v7i1.5239

Betina Lacunza, A., y Contini de González, N. (2011). Las habilidades sociales en niños y adolescentes. Su importancia en la prevención de trastornos psicopatológicos. *Fundamentos en Humanidades*, XII(23), 159-182. <https://www.redalyc.org/pdf/184/18424417009.pdf>

Caballo, V. E. (2007). *Manual de evaluación y entrenamiento de las habilidades sociales*. Siglo XXI.

Fernández Berrocal, P. y Extremera Pacheco, N. (2005). La Inteligencia Emocional y la educación de las emociones desde el Modelo de Mayer y Salovey. *Revista Interuniversitaria de Formación del Profesorado*, 19 (3),63-93. <https://www.redalyc.org/articulo.oa?id=27411927005>

Flores Lascano, E. (2020). Estudio de las habilidades sociales en los Estudiantes universitarios. Caso: estudiantes de Ingeniería Empresarial de la Escuela Politécnica Nacional [Tesis de licenciatura, Escuela Politécnica Nacional] <http://bibdigital.epn.edu.ec/handle/15000/21067>

Flores Mamani, E., García Tejada, M. L., Calsina Ponce, W. C. y Yapuchura Sayco, A. (2016). Las habilidades sociales y la comunicación interpersonal de los estudiantes de la Universidad Nacional del Altiplano – Puno. *Comuni@cción*, 7(2), 5-14. http://www.scielo.org.pe/scielo.php?script=sci_arttext&pid=S2219-71682016000200001&lng=es&tlng=es.

Goldstein, A., Sprafkin, R. y Klein, P. (1989). *Habilidades sociales y autocontrol en la adolescencia. Un programa de enseñanza*. Martínez Roca.

González Hernández, J. (2016). El Análisis Situacional del Trabajo, una alternativa para el desarrollo de los planes de estudios de la Ingeniería en Energías Renovables en la Universidad Tecnológica de Altamira. *RIDE Revista Iberoamericana para la Investigación y el Desarrollo Educativo*, 6 (12). <https://www.redalyc.org/articulo.oa?id=498153966014>

Hernández-Castillo, A., Arredondo-Muñozcano, A., Padilla-Gutiérrez, L., López-Rueda, M. y González-Arredondo, L. (2022). *Detección de necesidades de formación en habilidades del ser en el egresado de la Universidad Tecnológica de León. En: 3er. Congreso de Cuerpos Académicos, Investigación y Posgrado 2022. Universidades Tecnológicas y Politécnicas. Trabajos de Investigación de Cuerpos Académicos e Investigadores de las Universidades Tecnológicas y Politécnicas 2022.* Universidad Politécnica del Estado de Morelos.

<https://congreso.upemor.edu.mx/libro.php>

Morán, V. E. y Olaz, F. O. (2014). Instrumentos de evaluación de habilidades sociales en América Latina: un análisis bibliométrico. *Revista de Psicología*, 23(1),93-105. <https://www.redalyc.org/articulo.oa?id=26432004010>

Sánchez Paredes, R. G., y Ñañez Silva, M. V. (2022). Percepción del trabajo en equipo y de las habilidades sociales en estudiantes universitarios. *Puriq*, 4, e265. <https://doi.org/10.37073/puriq.4.265>

Tolentino Quiñones, H., (2020). Habilidades sociales y estrategias didácticas para la formación del liderazgo desde la educación básica. *Revista Educación*, 44(2), <https://doi.org/10.15517/revedu.v44i2.40270>

Trujillo-Segoviano, J., (2014). El enfoque en competencias y la mejora de la educación. *Ra Ximhai*, 10(5), 307-322. <https://www.redalyc.org/articulo.oa?id=46132134026>

Vázquez-Velázquez, J. (2016). A propósito del aniversario 25 de las Universidades Tecnológicas: una reflexión sobre su pertinencia. *Revista COEPES*. <http://www.revistacoepesgto.mx/revistacoepes16/a-proposito-del-aniversario-25-de-las-universidades-tecnologicas-una-reflexion-sobre-su-pertinencia> .