

DOI: 10.5281/zenodo.12426402

BIBLIOMETRIC ANALYSIS OF PREDOMINANT SOCIAL SKILLS AMONG UNIVERSITY STUDENTS (2014–2024)

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Received: 14/11/2025
Accepted: 02/03/2026

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ABSTRACT

This study identified soft skills in university students through a systematic review and bibliometric analysis, especially after the pandemic, scientific production on the subject continues to grow, with a focus on employability and collaborative learning. The objective was to determine the most prevalent soft skills in university students through a systematic review of scientific literature published between 2014 and 2024 and a bibliometric analysis of academic production. The databases consulted were Web of Science Core Collection (WoS) and Scopus, data processing and analysis was performed using VOSviewer, Biblioshiny and the ScientoPy package in Python, 1715 records were loaded: 638 (37.2 %) from WoS and 1 077 (62.8 %) from Scopus, emphasizing assertive communication skills, empathy, teamwork and conflict resolution. The number of publications on the subject has increased, especially since 2018, writers, universities and countries such as the United States, Spain and Brazil lead the production of scientific results. It is concluded that soft skills are essential in higher education and allow insertion into the labor market.

KEYWORDS: Social skills, students, university students, database analysis.

1 INTRODUCTION

Nowadays, in which interaction and collaborative work are fundamental, social skills have become a key component for the integral development of university students (García Vera, Sanz Herranz, & Fernández Pinto, 2021). These skills not only foster effective interactions in the educational setting, but are also vital for success in the work environment (Rodríguez Hernández & Tapia Valladares, 2022).

Social skills, by incorporating abilities such as assertive communication, empathy, teamwork and constructive conflict resolution, allow students to build solid connections, convey their ideas clearly and adapt to diverse contexts (López González & Martínez Vicente, 2020). Several investigations have highlighted the importance of fostering these competencies during university education, recognizing their benefit in students' social adaptability and academic performance (Díaz Mujica, Pérez Sanagustín, & Hernández García, 2023).

For example, Delgado et al. (2021) stress the importance of fostering collaboration in university education, indicating that collaborative work is crucial for the development of interpersonal skills. García & González (2020) argue that group activities demonstrate the degree of students' social competencies, while Ortega et al. (2021) highlight the dedication of teachers to educate students with civic attitudes and interpersonal competencies to face contemporary challenges.

In a global scenario in which competitiveness at work and social cohesion are essential elements, psychology and education studies are united in a critical aspect: the simple attainment of technical skills no longer represents an absolute guarantee of success. Current research, such as that conducted by Gil et al. (2021) and Hernández (2021), underlines the crucial importance of developing solid social skills to promote an individual's integral growth. This view emphasizes that the ability to relate effectively with others, forge strong personal bonds, and manage the complexities of communication are fundamental to flourish in both work and personal environments.

Furthermore, León et al. (2015) support this concept by highlighting the importance of these competencies in social and work interaction, suggesting that their usefulness goes beyond a particular context and applies to all aspects of life. Thus, it is acknowledged that social competencies are essential to establish bonds, solve disputes and cooperate in a profitable way, which, in turn, favors better individual and group well-being.

In the work environment, both companies and

entities pursue talents with soft skills, such as assertive communication, conflict resolution skills and teamwork. Research by Salazar et al. (2020), Larruze et al. (2020), and Ortega et al. (2021) align in the conclusion that applicants who evidence these skills possess considerable benefit in selection processes. These findings underscore the growing appreciation of soft skills as a distinctive element in the workplace.

The relevance of soft skills goes beyond the selection process, and encompasses the internal dynamics of organizations. Zea & Franco (1991) stress that enhancing these skills is vital to preserve healthy interpersonal relationships in the work environment. A work environment in which respect, empathy and cooperation prevail promotes efficiency, creativity and well-being of workers.

To enhance social competencies in the university context, it is essential to examine both students' behavior and teachers' teaching tactics. According to suggestions by León et al. (2015) and Delgado et al. (2021), the implementation of training programs focused on strengthening soft skills is suggested. These initiatives should focus on promoting assertiveness and effective communication, providing students with the resources required to interact constructively.

In addition, the relevance of fostering collaborative activities, in which students can use and exercise these competencies in real contexts, thus enhancing their ability to collaborate as a team and build strong personal bonds, is emphasized.

In the midst of the COVID-19 pandemic, students appreciated their academic and work education, understanding the relevance of getting involved with society to contribute to the improvement of the social condition (Bas, Fernández, & Gómez, 2020). Within this framework, priority was given to competencies such as empathy, assertiveness and conflict resolution, evidencing the ability to interact to obtain social support. Ortega et al. (2021) argue that these competencies enhanced interaction in education, encouraging students to continue their education.

Recent research has highlighted the importance of social skills in the integral growth of students. Armada et al. (2020) argue that these skills not only have an impact on behavior, but also strengthen essential attitudes and emotions in students, contributing in a relevant way to the formation of their identity and the strengthening of self-management competencies. In a more extensive framework, Delgado et al. (2021) highlight the direct relationship between social and civic skills, emphasizing their essential role in fostering social

integration. These writers argue that the fostering of these competencies guides people towards the pursuit of well-being on a personal and collective level, promoting participatory and engaged citizenship.

Additionally, both Almerich et al. (2020) and Zuñiga et al. (2022) agree that social skills are fundamental for the promotion of empathy and reciprocal respect. These skills make it possible for people to understand and take into account the points of view of others, which in turn favors the generation of a favorable environment for cooperation and learning. By promoting an environment of respect and understanding, social skills improve results in the achievement of objectives, both individually and as a group (Vergara Moncada, 2023).

As Acuña (2019) indicates, Albert Bandura's Social Learning Theory provides essential insight into how people acquire and reproduce behaviors in the context of their social interactions. This theory argues that learning is not restricted to direct experience, but also happens through observation and imitation of others. Within the framework of social interactions, this implies that individuals tend to emulate the behaviors they see in their peers, which has a considerable impact on the dynamics of their relationships.

In line with this concept, Fernandez et al. (2009) argue that the promotion of social skills plays a crucial role in fostering collaborative work, the fluid exchange of ideas and the generation of a positive social environment. By promoting skills such as effective communication, empathy and conflict resolution, social skills help to create an environment in which reciprocal respect and a willingness to deal with disagreements constructively prevail. Ultimately, these skills are fundamental to establishing strong and productive bonds, both in the personal and work context.

According to Peñalva et al. (2020) indicate that social behaviors show the educational actions aimed at enhancing students' skills, underlining the importance of addressing the impacts of social competencies for a complete education. Sierra et al. (2021) stresses that contemporary educational needs should value the relevance of these competencies, applying pedagogical tactics that foster their evolution and prevent difficulties in students when dealing with unfavorable circumstances.

Despite the increasing evidence of the relevance of social skills in the integral growth of university students, significant theoretical and methodological gaps are detected in their incorporation into

academic programs. Despite the fact that multiple recent studies have highlighted the importance of skills such as empathy, assertiveness, interpersonal communication and the ability to resolve conflicts, there is still no unified theoretical framework that makes it possible to assess and foster these skills systematically in the university context (Ramírez et al., 2021; Martín & Gómez, 2021).

One of the most prominent challenges is the lack of validated and consistent assessment tools that address the complexities of socioemotional skills. The lack of reliable assessment instruments produces fragmented results and complicates comparison between investigations, restricting the advancement of innovative and effective pedagogical strategies (López, Jiménez, & Castro, 2023). The absence of agreement about which aspects of social competencies are most relevant and in what way they should be assessed hinders the development of personalized intervention programs tailored to the demands of students (Díaz & Pérez, 2020).

The situation becomes even more complex with the shift towards hybrid and virtual forms of teaching, which have demonstrated the importance of adjusting and enhancing social skills in digital interaction environments (Sánchez, Ortega, & Medina, 2020). Communication through technology presents unique challenges to foster empathy, attentive listening, and conflict resolution, fundamental competencies for success in collaborative and diverse environments. The absence of face-to-face interaction and reliance on digital resources can be obstacles in the formation of strong and highly relevant interpersonal relationships (Cruz & Romero, 2023).

In addition, the discrepancy between theory and reality is evident in that, despite the high labor market demand for professionals with strong interpersonal competencies, many university education programs focus primarily on strengthening technical skills, leaving the development of social skills in second place (Torres & Morales, 2022). This prioritization of technical skills over social skills evidences a mismatch between the demands of the labor market and the educational proposal, leading to graduates with an imbalance in their skills.

The absence of soft skills in the university curriculum not only restricts students' ability to relate efficiently in work contexts, but also limits their personal growth and their ability to adjust to an increasingly collaborative and varied work environment (Jiménez & Rodríguez, 2020).

The present research shows that, although several

strategies and methods have been suggested to enhance these skills, there are still large gaps regarding the effectiveness of interventions and the transversal incorporation of soft skills in the teaching-learning process (Martínez et al., 2022). The absence of an agreement on the defining variables and appropriate assessment methods highlights the urgency of conducting research that aggravates the conceptualization and implementation of these skills, with the aim of building a solid theoretical framework to guide future pedagogical actions (Ibáñez & Rojas, 2021).

The relevance of studying the most prevalent social skills in university students is based on their direct influence on school performance, adaptation to work environments and the emotional well-being of individuals (Morales Rodríguez, Espigares López, & Brown, 2020). In a scenario in which digitalization and new teaching methods have revolutionized the dynamics of education, the urgency of enhancing skills such as empathy, assertiveness and the ability to resolve conflicts becomes evident (Oller, 2023).

These skills not only boost communication and cooperation in educational environments, but also train the professionals of the future to face challenges in an increasingly interrelated and demanding world (Pérez & Martínez, 2023).

Research on the social skills of college students is critical because it can provide valuable information on how students cope with complex social situations, manage conflicts, and develop meaningful relationships (Cajas Bravo, Paredes Pérez, Pasquel Loarte, & Pasquel Cajas, 2020). By deepening our understanding of these dynamics, we can gain a clearer understanding of the challenges and opportunities students face in college life (Morales Rodríguez, Espigares López, & Brown, 2020).

In addition, understanding which social skills are most prevalent among this group can help identify strengths and weaknesses, thus informing the development of personalized intervention and support plans to improve students' social and emotional well-being (Sánchez, Ortiz, & Hernández, 2020).

In today's digital age, social skills are more relevant than ever, given that students must have the ability to relate effectively with individuals of different cultures, ages, and backgrounds, both in digital and face-to-face formats (Otero Escobar, 2024). Globalization and technology have generated an interconnected world in which communication and teamwork overcome geographical and cultural boundaries (Soledispa Lucas & Murillo Delgado, 2020). In this scenario, the ability to understand and

respect diverse visions, to communicate with clarity and empathy, and to establish meaningful bonds has become indispensable to succeed in all areas of life (López & Saldaña, 2023).

Universities are the ideal place to develop these skills because it provides unique opportunities to interact with people from different disciplines, interests and perspectives (Duran & Parra, 2020). The diversity of the student body, faculty and staff from diverse backgrounds, and a wide variety of extracurricular activities and collaborative projects create a rich and stimulating environment for social learning (González & Ramírez, 2021). In addition, the university provides spaces for debate and discussion, where students learn to respectfully express their ideas and consider different perspectives (Pérez & Martínez, 2022).

Thus, studying the most dominant social skills in university students can provide useful data about how students are ready to navigate in an increasingly interconnected and diverse world (Delgado & Gómez, 2021). This research can contribute to recognizing students' strengths and weaknesses in terms of soft skills, as well as the most effective pedagogical tactics to foster their growth. Additionally, it can provide valuable data for educational institutions, employers, and policy makers about how to support students as they transition into work and citizenship (Ortega & Ramirez, 2021).

The development of soft skills constitutes a determining factor in the academic, professional and personal success of university students. Despite the growing demand in the labor market for professionals with solid interpersonal skills -such as assertive communication, empathy and conflict resolution- a large part of the curricula prioritize technical skills, leaving the strengthening of social skills in the background.

The development of social skills in the university setting is an essential component of students' comprehensive education, as it contributes to their academic performance, emotional well-being, and professional preparation. These skills, which include empathy, assertive communication, conflict resolution, and collaborative work, have been widely recognized in recent literature as key tools for facing the challenges of the contemporary educational and work environment (Delgado et al., 2021; Hernández, 2021; Álvarez-García, García-Ríos, & González-Castro, 2021).

Universities are privileged spaces for strengthening these skills. Interaction between students from different disciplines and cultures

offers opportunities to acquire social skills that enable them to build meaningful relationships and participate actively in society (González and Ramírez, 2021; Duran and Parra, 2020; Otero Escobar, 2024). However, several studies have warned of a disconnect between the demands of the labor market and university education, which continues to prioritize technical skills at the expense of social-emotional development (Camacho-Miñano, Moyano-Fuentes, & Sacristán-Díaz, 2019; Jiménez & Rodríguez, 2020; Casanovas & Alcaraz, 2023).

This training gap has become even more evident in the wake of the COVID-19 pandemic, which has brought about significant changes in learning environments. The transition to hybrid or virtual modalities exposed limitations in cultivating skills such as empathy, active listening, and interpersonal communication, the absence of which has an impact on the quality of human relationships and academic collaboration (Sánchez, Ortega, & Medina, 2020; Cruz & Romero, 2023; Medrano, Galarza, & Peñaherrera, 2023). Given this situation, various authors have emphasized the need to integrate these skills across the university curriculum through active methodologies and evidence-based intervention programs (Pérez-López, Moya-Mata, & Ruíz-Rico, 2023; Ibáñez & Rojas, 2021; Martínez, Serrano, & Domínguez, 2022).

Despite growing academic interest, scientific output on social skills in university students reveals theoretical and methodological gaps. There is still a lack of a unified conceptual framework and valid instruments to rigorously measure these skills, which hinders the implementation of effective pedagogical strategies (González-Gómez, Santos Orejudo, & Cebollero-Salinas, 2024; Ramírez, López, & Vega, 2021; López, Jiménez, & Castro, 2023). Furthermore, descriptive studies predominate over experimental research that evaluates the real impact of educational interventions (Cerezo, Sánchez-Santillán, and Núñez, 2020; Caballero-González, Abello-Llanos, and Palacio-Sañudo, 2019).

In this context, researching the predominant social skills among the university population and how they have been addressed in the scientific literature allows us to close substantial gaps in the design of educational policies, assessment models, and specific interventions. It also provides empirical evidence that can guide institutional and professional action to respond to the current demands of the knowledge society (Morales Rodríguez, Espigares López, and Brown, 2020; Pérez and Martínez, 2023; Ortega and Ramírez, 2021).

1.1 Research questions

1. What are the main social skills studied in the academic literature on university students during the period 2014-2024?
2. How has the volume of publications and collaboration between authors and institutions in this field evolved over the last decade?
3. What thematic trends emerge from the co-citation and keyword analyses in studies on social skills in higher education?

1.2 Research approach

This research adopts a mixed-methods approach grounded in bibliometric analysis and systematic review. The bibliometric analysis quantifies scientific output, identifies collaboration patterns, and maps thematic evolution, while the systematic review synthesizes conceptual and methodological findings concerning the predominant social skills among university students.

To conduct a bibliometric analysis of publications on social skills in university students between 2014 and 2024, identifying the main skills studied, the evolution of scientific production, collaboration networks (authors and institutions), and emerging thematic trends in this field.

2 METHODOLOGY

This study employed a bibliometric approach to examine the scientific production on soft skills in university students between January 1, 2014 and December 31, 2024. The databases consulted were Web of Science Core Collection (WoS) and Scopus. Data processing and analysis was performed using VOSviewer, Biblioshiny and the ScientoPy package in Python (Ridwana et al., 2025; Ruiz-Rosero et al., 2017).

2.1 Search Query

Web of Science

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((TS=("social skills" )) AND TS=("universit*" OR "college student*" OR "undergraduate*" OR "postsecondary student*" OR "tertiary education*" OR "higher education*" OR "academic student*" OR "degree-seeking student*" OR "graduate student*" OR "postgraduate*" OR "bachelor student*" OR "campus community" )) AND DT=(Article) AND PY=(2014-2024)
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Scopus

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(TITLE-ABS-KEY ( "social skills" ) AND TITLE-ABS-KEY ( "universit*" OR "college student*" OR "undergraduate*" OR "postsecondary student*" OR "tertiary education*" OR "higher education*" OR "academic student*" OR "degree-seeking student*" OR "graduate student*" OR "postgraduate*" OR
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"bachelor student*" OR "campus community")) AND PUBYEAR > 2013 AND PUBYEAR < 2025 AND (LIMIT-TO (DOCTYPE , "ar")) Dataset

A total of 1,715 records were uploaded: 638 (37.2%) from WoS and 1,077 (62.8%) from Scopus. All corresponded to scientific articles; no records were excluded by document type (Table 1).

Table 1 Summary of the selected Documents Source: Own elaboration based on WoS and Scopus.

Source	Articles	Total	% of Total
WoS	638	638	37,2 %
Scopus	1 077	1 077	62,8 %
Total	1 715	1 715	100 %

A total of 459 duplicates were identified (26.8% of the total). Two records were removed from WoS (0.3 %) and 457 from Scopus (42.4 %), retaining the WoS version in case of discrepancies in citation counts. Of the duplicates, 301 (65.6 %) showed differences in the number of citations. The final set comprised 1,256 articles: 636 (50.6 %) from WoS and 620 (49.4 %) from Scopus (Table 2; Figure 1).

Table 2 Documents after elimination of duplicates

Source	Final selected articles	Total	% of Total
WoS	636	636	50,6 %
Scopus	620	620	49,4 %
Total	1 256	1 256	100 %

Source: Own elaboration based on WoS and Scopus.

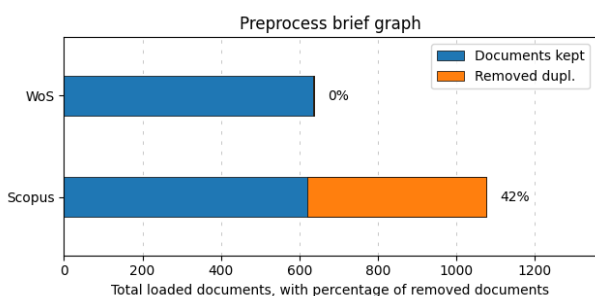


Fig. 1 Graphical summary of WoS and Scopus preprocessing of documents.

Source: Own elaboration with data from WoS and Scopus.

2.2 Data preprocessing

Unification of author names

ScientoPy standardized name formats by removing punctuation and accents, consolidating variants under a single identity.

Keyword Normalization

A Python script was developed with spaCy to clean up and standardize the "Index Keywords" and "Author Keywords" fields. The procedure included separation of terms by ";", conversion to lowercase, removal of accents and non-alphanumeric

characters, lemmatization, and removal of redundant spaces. After the process, the unique keywords decreased from 3 661 to 3 015 in "Index Keywords" and from 3 750 to 3 139 in "Author Keywords".

Elimination of duplicates

The exact match of title and authors made it possible to identify duplicates; the WoS version was maintained in case of duplicate records in both sources.

Calculation of the h-index and citation count

For each document, the highest number of citations reported by WoS or Scopus was assigned. With this information, the h-index was calculated for authors and countries for the period 2014-2024.

Bibliometric analysis

VOSviewer and Biblioshiny were used to perform co-authorship network analysis, co-citation and emerging themes detection. These techniques allowed mapping trends, identifying thematic clusters and visualizing scientific collaborations.

3 RESULTS

3.1 Annual Production

Between 2014 and 2024, 1 253 articles were published on social skills in university students, evidencing a sustained growth of scientific production in this field. The overall h-index reached 53, indicating that 53 articles have received at least 53 citations each, reflecting a moderate but consistent impact on the discipline. The compound annual growth rate (CAGR) was 17.5%, with an average of 166 new publications per year (see Figure 2).

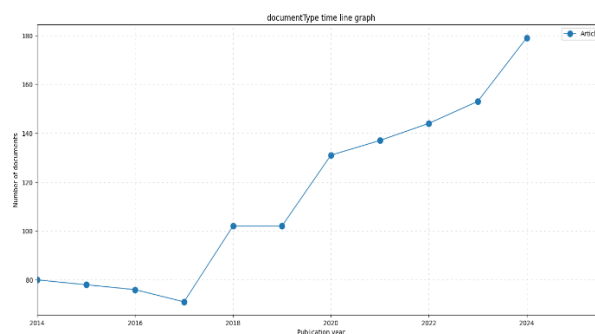


Fig. 2 Annual scientific production

Source: Own elaboration with data from WoS and Scopus.

In 2014, 80 publications were recorded, a figure that remained relatively stable until 2017 (minimum of 71 articles). From 2018 onwards, a steady rise began, reaching 102 articles that year, and exceeding 130 documents per year from 2020. The peak was observed in 2024, with 179 articles, representing an increase of 124 % compared to 2014.

The citation analysis confirms this increasing

trend in relevance: the ten most cited articles, published between 2014 and 2019, accumulate between 128 and 274 citations each, concentrating 22 % of the total citations of the period. In particular, documents from 2014 stand out for their longevity and continued influence - the most cited article (Gelbar et al., 2014, 274 citations) remains a key reference - while those published after 2019 show a rapid increase in citations, suggesting an emerging interest reinforced by post-COVID-19 educational changes.

Taken together, both the sustained increase in the number of publications and the high citation volume of pioneering articles underscore the consolidation of soft skills as a growing and increasingly impactful area of research within higher education.

3.2 Most relevant authors

The analysis of the authors with the greatest scientific production in the field of social skills in university students makes it possible to differentiate researchers with consolidated careers from those who are beginning to stand out for their recent incursion into the subject. In addition, the temporal evolution of their publications and the variability of indicators, such as growth rate and h-index, illustrate the changing dynamics and areas of opportunity for new collaborations or follow-up research.

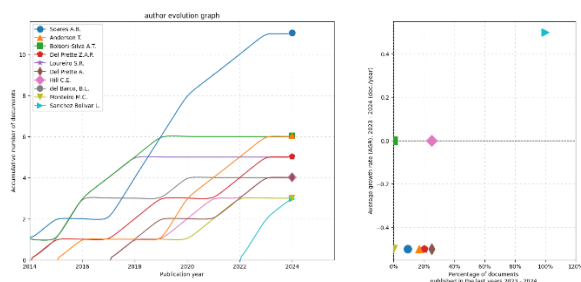


Fig. 3 Most relevant authors

Source: Own elaboration with data from WoS and Scopus.

Figure 3 shows a set of ten authors with the highest production of documents related to social skills in university students, according to the bibliometric database analyzed. The total number of documents indicates that Soares A.B. leads with 11 publications, while the second place is occupied by Anderson T. with 6. However, notable differences are observed when examining growth metrics and temporal distribution of production.

The AGR (Average Growth Rate) indicator suggests publication rates that, in most cases, are negative or close to zero (e.g., -0.5 for Soares and Anderson), which could indicate a lower emphasis on new academic documents in recent years. In

contrast, Sanchez-Bolivar L. presents a positive AGR of +0.5, reinforced by a PDLY (Percentage of Documents in the Last Years) of 100 %, indicating that all his articles are concentrated in 2023 and 2024. However, his h-index is 0, suggesting a recent trajectory without the degree of citations that more established authors have accumulated.

Within the group, Anderson T. exhibits the highest h-index (5), followed by Soares A.B. and Bolsoni-Silva A.T. (both with 4). This index reflects the influence and visibility of their research, despite the fact that their AGRs are negative. These results suggest that some authors have reached a solid position in terms of citations and visibility, although their most recent publications are not as numerous as in previous years.

Regarding the distribution by year, authors with notable peaks of production in 2018 and 2019 are identified (e.g., Bolsoni-Silva and Loureiro), while Del Prette (A. and Z.A.P.) appears with several articles spread between 2018 and 2024. Authors such as Hill C.E. and del Barco B.L. show production concentrated in more recent years, although their total volume is smaller (4 articles).

In summary, the quantitative and comparative analysis indicates that Soares A.B. and Anderson T. occupy the top positions in volume of publications, while the production of other authors (such as Sanchez-Bolivar L.) is emerging but concentrated in recent years. The h-index and publication rates suggest a differentiation between consolidated authors, with higher citation impact, and rising authors who could become relevant if their recent production continues to increase in volume and impact.

3.3 Institutions and their most relevant countries

The geographical distribution of research on social skills in university students reflects the contribution of institutions with varied backgrounds and academic approaches. The presence of universities from Spain, the United States, Brazil, Australia and other countries confirms the international interest in understanding and strengthening these competencies in higher education. The study of these institutions and their volumes of publications offers indications of the density of collaborations, the consolidation of research networks and the thematic evolution that drives conceptual and methodological advances in the field of soft skills (see Figure 4).



Fig. 4 Institutions and their most relevant countries
Source: Own elaboration with data from WoS and Scopus.

The quantitative review reveals that the Universidad de Granada (Spain) occupies first place with 12 documents and an h -index=7, indicating a consolidated academic presence, despite an AGR (-0.5) that suggests a slight recent decline in its publication rate. The University of California, Los Angeles (USA) shows 10 documents and a positive AGR (+1.0), with 30% of its documents in recent years, reflecting a more active line of research in the final stage of the period. Other institutions with relevant productions include the Universidad de Alicante (Spain) and the University of São Paulo (Brazil), both with 8 documents, although the latter shows a more accelerated growth ($AGR=+1.5$) and a percentage of 50% of its publications concentrated in recent years. Likewise, the Universidad de Zaragoza (Spain) presents a percentage of documents in the last tranche (PDLY) of 80%, which makes it an emerging player in the field. On an intermediate level are entities such as Purdue University (USA) and the Universidad Complutense de Madrid (Spain), each with 6 documents, which maintain a moderate impact according to their respective h -index. There are also Latin American, Asian and other regional institutions with a lower volume of academic research but with positive growth trends, for example, Universidad César Vallejo (Peru) and Guangzhou University (China), which underscores the globalization of the academic debate on social competencies in higher education.

3.4 Thematic evolution

The evolution of keywords associated with social skills in university students, between 2014 and 2024, allows us to observe conceptual transformations and the emergence of new lines of research. The transitions between periods reflect the continuity of central themes (e.g., social skill or emotional intelligence) and the progressive incorporation of emerging factors (such as collaborative learning, cooperative learning or employability), which confirms the diversity of approaches in this field see Figure 5.

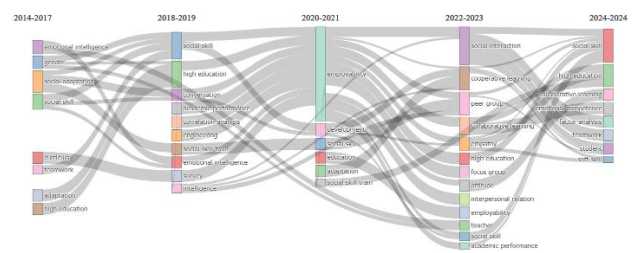


Fig. 5 Institutions and their most relevant countries
Source: Own elaboration based on data from WoS and Scopus.

The data show that "social skill" remains as an articulating axis from 2014 to 2024, with a volume of occurrences above 80 in several stages and a high capacity to link concepts (Weighted Inclusion Index up to 0.86). In the later years (2022-2023), concepts such as "empathy", "collaborative learning" and "cooperative learning" appear, showing high inclusion indexes (e.g. cooperative learning presents 0.85 in the transition 2020-2021 to 2022-2023). In addition, the results point to the rise of employability, which retains a 100% inclusion rate in two consecutive periods, indicating a growing interest in the relationship between soft skills and job readiness.

The participation of terms such as "academic performance" and "high education" in several transitions confirms the concern for measuring the impact of soft skills on academic success and career development. On the other hand, "soft skill" and "teacher" consolidate their presence in 2022-2024, suggesting a need to address teacher training and the strengthening of transversal competencies. The lower Stability Index in some cases (e.g., 0.01 for social adaptation in 2014-2017) indicates the incorporation of new nuances and complementary terms, reflecting the dynamic nature of the research. In summary, the thematic landscape evolves from an initial emphasis on adaptation and emotional intelligence to the analysis of collaborations, empathy, and employability, demonstrating the steady broadening of this field of study.

3.5 Keyword cloud

The analysis of keywords contributes to the understanding of the thematic trends around social skills in university students. In addition to quantifying the frequency of occurrence, indicators such as the Average Growth Rate (AGR) and the Percentage of Documents in the Last Years (PDLY) reflect the temporal dynamics of each term, making it possible to identify emerging focuses and consolidated areas of research (Figure 6).

with their citation patterns, provides clues about the theoretical depth and variety of methodologies employed in recent research. In addition, the analysis of the clusters of editorial collaboration contributes to understanding the thematic networks and priorities of each scientific community (see Figure 8).

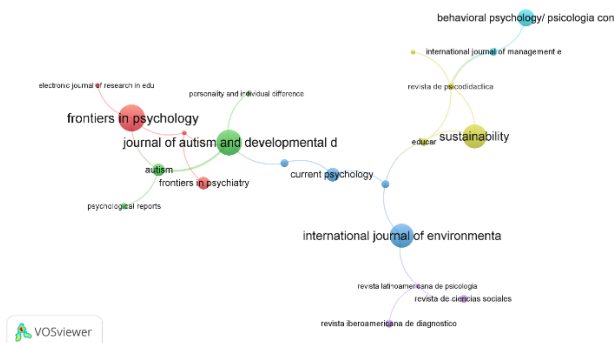


Fig. 8 Institutions and relevant countries

Source: Own elaboration with data from WoS and Scopus.

The leading journal is *Frontiers in Psychology* with 18 documents and 385 citations, which indicates a leading role in the dissemination of studies. It is followed by the *Journal of Autism and Developmental Disorders* with 17 publications and a significant number of citations (772), which shows its high incidence in research on autism spectrum disorders and their relationship with social skills. *International Journal of Environmental Research and Public Health* and *Sustainability* have 16 documents each, with 361 and 417 citations respectively, revealing a growing interest in the connection between interpersonal skills and socio-environmental settings. *Behavioral Psychology / Psicología Conductual* shows 14 documents and 380 citations, confirming its influence in the discussion on intervention strategies and measurement of skills.

The configuration of six clusters supports the identification of thematic affinities between journals:

- In Cluster 1, *Frontiers in Psychology* and *Frontiers in Psychiatry* stand out, illustrating the link between mental health and social skills.
- Cluster 2 groups together publications such as *Autism* and *Journal of Autism and Developmental Disorders*, denoting a special attention to clinical and educational aspects in the autism spectrum.
- Cluster 3 emphasizes approaches in psychology and education (*Computers in Human Behavior*, *Current Psychology*), together with environmental studies (*International Journal of Environmental Research and Public Health*).
- Cluster 4 connects proposals with interest in pedagogical innovation (*Educación*, *Revista de Psicopedagogía*, *Sustainability*).
- Cluster 5 groups Ibero-American journals dedicated to social and psychological research (*Revista de Ciencias Sociales*, *Revista Iberoamericana de Diagnóstico y Evaluación Psicológica*, *Revista Latinoamericana de Psicología*).
- Cluster 6 brings together *Behavioral Psychology / Psicología Conductual* and *International Journal of Management Education*, which points to the interaction between social behaviors and aspects of management education.

The results indicate that the journals with the highest number of documents and citations adopt interdisciplinary perspectives on the social formation of university students, which favors the broadening of lines of research and the diversification of theoretical frameworks in this field.

4 GENERAL DISCUSSION

The results of this study confirm the growing importance of soft skills in university education and their impact on the academic, emotional and professional well-being of students. Systematic reviews and bibliometric analyses revealed a significant evolution in the topics between 2014 and 2024, with a notable increase in the number of publications and methodological diversity (Vargas Mendoza, Hernández, & Gómez, 2021).

One of the key findings was that skills such as assertive communication, empathy, collaboration, and conflict resolution were consolidated as fundamental pillars of integral development. These elements not only promote social interaction among students, but also improve their academic and professional performance (Torres-Marín, García-Sevilla, & Rodríguez-Cano, 2020). In addition, concepts such as "employability" and "collaborative learning" have become increasingly popular in recent years, highlighting the link between soft skills and job readiness (Salas-Rodríguez et al., 2022; Casanovas & Alcaraz, 2023).

However, the study also identified important conceptual and methodological gaps. Despite the growing attention in this area, there is still no unified theoretical framework that can assess and promote these skills in a coherent and systematic way (González-Gómez, Santos Orejudo, & Cebollero-Salinas, 2024). The lack of validated tools, the absence of experimental teaching interventions, and the predominance of descriptive research limit the

advancement of knowledge and hinder the implementation of effective educational practices (Jiménez-Olmedo, 2021).

Likewise, digital environments and blended learning present new challenges for the development of interpersonal skills (Medrano, Galarza, & Peñaherrera, 2023). The lack of face-to-face interaction, added to the dependence on technology, makes it difficult to strengthen skills such as empathy, active listening, and emotion management in a collaborative environment (Álvarez-García, García-Ríos, & González-Castro, 2021). The gap between in-person attendance and virtual learning points to the urgent need to adapt teaching and learning methods so that soft skills can also be developed in digital environments (Gómez-Galán, 2021).

From an institutional perspective, the labor market's demand for talent tends to be for soft skills, while university education still focuses on technical skills, and there is a disconnect between the two (Camacho-Miñano, Moyano-Fuentes, & Sacristán-Díaz, 2019). This misalignment affects the employability of graduates and their ability to adapt to a diverse, multidisciplinary, and changing work environment (Succi & Canovi, 2020).

Finally, although specific efforts have been made to promote students' socioemotional development, there is still a need to incorporate these skills into the curriculum. The data collected support the urgent need to develop inclusive educational policies that address this issue from a comprehensive, evidence-based and sustained perspective (OECD, 2021).

4.1 Discussion 1: Varios Conceptuales Y Metodológicos En El Estudio De Habilidades Sociales

Despite the growing interest in soft skills in universities, this systematic bibliometric review revealed significant gaps in theory and methodology. One of the main challenges is the lack of a unifying theoretical framework that can systematically assess these skills (Moya-Mata, Ruíz-Rico, & Pérez-López, 2020). This has led to isolation and poor comparability of research, affecting the consolidation of effective teaching strategies (Oliveira, Cunha, & Gama, 2022). In addition, the lack of standardized and validated assessment tools leads to inconsistent

results and hinders the design of accurate interventions (Caballero-González, Abello-Llanos, & Palacio-Sañudo, 2019). Most studies focused on descriptive or correlational analyses, while intervention trials were rare and poorly systematized (Cerezo, Sánchez-Santillán, & Núñez, 2020).

In addition, the transition to a digital environment, especially after COVID-19, has highlighted the need to adapt social skills to virtual environments, a challenge that has not yet been adequately addressed (Castaño-Muñoz, Kalz, Kreijns, & Punie, 2021).

4.2 Discussion 2: Practical Relevance And Gap Between Decline And The Labor Market

Another notable finding is the disconnect between university education and the demands of the labor market. While companies increasingly value soft skills such as empathy, confident communication and teamwork, university courses still prioritize technical content (Quispe Avalos, Ortega Murga, & Navarro, 2023). This gap causes many graduates to have difficulty integrating into diverse teams or resolving conflicts in collaborative environments (Almeida, Santos, & Monteiro, 2022).

Furthermore, the evidence collected suggests that, although the academic environment provides a context conducive to the development of these competencies, universities have not yet incorporated these competencies into their curricula (Pérez-López, Moya-Mata, & Ruíz-Rico, 2023). The lack of integration limits not only students' employability, but also their emotional and social well-being, both of which are essential for active citizenship and successful professional engagement (Vergara-Moncada, 2024).

5 CONCLUSIONS

When assessing the predominant social skills in university students, theoretical and methodological gaps were identified. Among the main findings, it was found that social skills are crucial for higher education, that there are great challenges to effectively integrate them into university teaching and that there is a need for better coordination between academic training and the needs of the labor market.

Conflicts of interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Funding: The research was conducted independently by the researchers, and no funding was received.

Data availability: The data supporting the findings of this study are available from the corresponding author, upon reasonable request.

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