

TEACHERS' SOFT SKILLS AND UNIVERSITY TEACHING QUALITY: A BIBLIOMETRIC REVIEW OF TRENDS AND CONTRIBUTIONS

Habilidades blandas docentes y calidad de la docencia universitaria: una revisión bibliométrica de tendencias y contribuciones

Habilidades interpessoais dos professores e qualidade do ensino universitário: uma revisão bibliométrica de tendências e contribuições

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ABSTRACT

Introduction: The research analyzes the relevance of teachers' soft skills to the quality of university teaching. **Materials and Methods:** The bibliometric analysis has examined the evolution, trends, and key contributions of the subject, examining 123 relevant publications between 1950 and 2023 in Scopus and Web of Science. The selected time frame (1950-2023) was chosen to analyze the historical development of the chosen subject by establishing a study parameter for a comprehensive understanding of both academic progression and its recent advances. **Results:** The findings reveal that soft skills play a crucial role in the quality of university teaching, with a positive impact on the comprehensive education of students. Secondly, there is a sustained evolution in annual scientific production, with a marked increase in recent years. **Discussion:** Thirdly, there is a marked tendency towards topics such as methodology, personality development, interpersonal communication, curriculum design, professional development, and didactic strategies, which stand out as central axes in research. **Conclusions:** Finally, the importance of incorporating soft skills in the university curriculum as an essential component to enhance the integral formation of students, favoring their adaptation and performance is highlighted. In the future, it is key to explore how soft skills are integrated into educational programs and redefine both the teaching profile and the preparation of students, adapting them to the competencies needed in a globalized and dynamic environment.

Keywords: soft skills, emotional intelligence, educational quality, university education.

RESUMEN

Introducción: La investigación analiza la relevancia de las habilidades blandas del profesorado para la calidad de la docencia universitaria. **Materiales y métodos:** El análisis bibliométrico ha examinado la evolución, tendencias y contribuciones clave de la materia, examinando 123 publicaciones relevantes entre 1950 y 2023 en Scopus y Web of Science. El marco temporal seleccionado (1950-2023) se escogió para analizar el desarrollo histórico de la materia elegida estableciendo un parámetro de estudio para una comprensión integral tanto de la progresión académica como de sus avances recientes. **Resultados:** Los hallazgos revelan que las habilidades blandas juegan un papel crucial en la calidad de la docencia universitaria, con un impacto positivo en la formación integral de los estudiantes. En segundo lugar, existe una

evolución sostenida en la producción científica anual, con un marcado aumento en los últimos años. Discusión: En tercer lugar, existe una marcada tendencia hacia temas como la metodología, el desarrollo de la personalidad, la comunicación interpersonal, el diseño curricular, el desarrollo profesional y las estrategias didácticas, que destacan como ejes centrales en la investigación. Conclusiones: Finalmente, se destaca la importancia de incorporar las habilidades interpersonales en el currículo universitario como componente esencial para mejorar la formación integral del alumnado, favoreciendo su adaptación y rendimiento. En el futuro, es fundamental explorar cómo se integran las habilidades interpersonales en los programas educativos y redefinir tanto el perfil docente como la formación del alumnado, adaptándolos a las competencias necesarias en un entorno globalizado y dinámico.

Palabras clave: habilidades interpersonales, inteligencia emocional, calidad educativa, formación universitaria.

RESUMO

Introdução: A pesquisa analisa a relevância das habilidades sociais dos professores para a qualidade do ensino universitário. **Materiais e métodos:** A análise bibliométrica examinou a evolução, as tendências e as principais contribuições do tema, examinando 123 publicações relevantes entre 1950 e 2023 na Scopus e na Web of Science. O período selecionado (1950-2023) foi escolhido para analisar o desenvolvimento histórico do tema escolhido, estabelecendo um parâmetro de estudo para uma compreensão abrangente tanto da progressão acadêmica quanto de seus avanços recentes. **Resultados:** Os resultados revelam que as habilidades sociais desempenham um papel crucial na qualidade do ensino universitário, com impacto positivo na formação integral dos alunos. Em segundo lugar, há uma evolução sustentada na produção científica anual, com um aumento acentuado nos últimos anos. **Discussão:** Em terceiro lugar, há uma tendência acentuada para tópicos como metodologia, desenvolvimento da personalidade, comunicação interpessoal, design curricular, desenvolvimento profissional e estratégias didáticas, que se destacam como eixos centrais na pesquisa. **Conclusões:** Por fim, destaca-se a importância da incorporação de habilidades sociais no currículo universitário como componente essencial para aprimorar a formação integral dos alunos, favorecendo sua adaptação e desempenho. No futuro, é fundamental explorar como as habilidades sociais são integradas aos programas educacionais e redefinir tanto o perfil docente quanto a preparação dos alunos, adaptando-os às competências necessárias em um ambiente globalizado e dinâmico.

Palavras-chave: habilidades sociais, inteligência emocional, qualidade educacional, educação universitária.

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INTRODUCTION

The mission of higher education is to train future citizens in technical or hard skills for quality work performance, as well as to train them in soft skills that help them to live in a balanced environment. This concept is currently highly valued since it involves skills that include diverse intrapersonal and interpersonal competencies. Among these it is possible to identify the ability to listen, the capacity to be assertive, the development of social skills, and the ability to interact productively.

In this context, soft skills play an essential role in higher education, directly influencing the teaching-learning process. Recent studies have shown that the classroom climate has a significant impact on the mental health and level of commitment of students, and that certain elements of teaching practice have an impact on academic stress (Nora-buena-Figueroa, 2025a, 2025b). These findings highlight the need to strengthen soft skills in teachers, since competencies such as effective communication, empathy and emotional management can contribute to the creation of more favorable learning environments. In this sense, it is essential to analyze the factors that promote meaningful learning and foster intrinsic academic motivation in students (Deroncele-Acosta, 2024; Mollo-Flores and Deroncele-Acosta, 2021), allowing a more comprehensive teaching adapted to the needs of students.

In the educational field, soft skills are based on the theory of emotional intelligence (Goleman, Daniel, 1998; Mayer et al., 2021) to consider an integrative conception of education between the intellectual and the emotional, thus achieving the global development of the students. The literature review shows examples such as (Taylor et al., 1988) who, through interviews, investigated the importance of these in teaching. Likewise, the analysis of interactive assessment underlines the central role of communication and interaction in the academic context (Morgan, 1989). Likewise, a recent study on inclusive schools shows the importance of teachers' soft skills such as: well-being, engagement, resilience, motivation, mental health, creativity, and happiness (Deroncele-Acosta & Ellis, 2024).

The development of soft skills has been shown to enhance competitiveness and success (Fetahu & Lekli, 2023) improving the quality of education (Goldman & Wong, 2020), being a fundamental link in the management

of quality as part of education for sustainable development (Galimullina et al., 2020). Hence, some authors have focused on studying its definition, development, and evaluation, as well as its role in the quality of organizations (Cimatti, 2016). However, today it is necessary to rethink these soft skills in the profile of university teachers, especially due to the demands of a digital era (Hadiyanto et al., 2017). Current discussions about higher education reflect a need to develop interpersonal competencies in university teaching, especially in the context of rapid technological growth, increasing global growth and a shift to a student-centered approach to learning. Educational institutions are faced with the challenge of effectively implementing these competencies in curricula and faculty programs. In reviewing previous research on interpersonal competencies, there is a theoretical gap in their evolution as a function of increasing digitization, interdisciplinary cooperativism, and the changing pace of the academic and professional environment. Research shows that teachers who develop solid socioemotional competencies manage to establish more effective and motivating learning environments (Rodríguez Siu et al., 2021). This calls for a review not only of the evolution and trends in this field but also systematizes the key contributions to its current and future development.

Recently, several studies have highlighted the importance of soft skills in education and explored contemporary strategies for their development, highlighting their impact on educational quality. The role of artificial intelligence and personalized mentoring in the empowerment of these skills has been analyzed, as well as the ability of teamwork in STEM contexts to foster meaningful interpersonal relationships. The relationship between creativity, learning motivation, and soft skills has also been investigated, and it has been shown how self-esteem can be strengthened through the development of collaborative competencies. (Calero López et al., 2024; De Prada et al., 2024; González-Rico & Lluch Sintes, 2024; Van Horne & Rakedzon, 2024). All contemporary studies agree on the need to integrate soft skills into educational programs as a key to preparing both teachers and students for the demands of a globalized and constantly changing environment, collaborative learning being a fundamental axis (Palacios-Núñez et al., 2022a, 2022b).

Soft skills can be understood as the practices, attitudes, and abilities that allow a person to relate and interact adequately with his or her environment. It is necessary to point out that emotional understanding, decision-making, achieving objectives, and facing challenging situations are feasible thanks to the development of these skills, which have been classified according to categories such as non-cognitive skills, socioemotional, relational, essential competencies, transversal skills, general competences or employability skills (Saepudin et al., 2022). Other authors also define them as a set of social and communicative attitudes that favor effective and healthy interactions (Rojas Chacaltana et al., 2023).

The 21st-century demands in the labor field, skills such as resistance to pressure, openness to diversity, willingness to work in a team, effective communication, and active listening, among others (Raitskaya & Tikhonova, 2019). These are soft skills that the university has the challenge of incorporating in its curricular content and its teachers so that they can develop them, as Chen & Peterson, (2021) point out when they state that “faculty soft skills, such as transformational leadership and creative problem solving, have a direct impact on pedagogical innovation and the effectiveness of teaching strategies” (p. 89).

Service quality requires not only the intellectual and didactic competencies of teachers but also the soft skills that are essential for success in the classroom and the professional environment (Ismail et al., 2020). In this sense, teaching competence and professional standards highlight the importance of these skills in the creation of interactive and student-centered learning, promoting significant achievements in the cognitive, social, and affective areas. Likewise, it allows the implementation of didactic strategies that enhance these skills, such as learning by discovery and collaborative work, being crucial for an education that goes beyond the transmission of technical knowledge, adopting a comprehensive education focused on the person and his performance (Joyce & Magesh, 2016).

In the literature review for the study, a direct relationship has been found between educational quality and the soft skills of teachers, highlighting them as a necessary element for effective teaching and lasting learning, with a direct impact on educational success, highlighting skills such as critical reflection in educational practice (Margules & Keith, 1969). In a complementary manner, authors in the 1980s highlight the importance of specific training and interpersonal skills in educational areas. This research highlights soft skills, such as effective communication, empathy, and adaptability, as essential to ensure high-quality education (Taylor et al., 1988; Tobias, 1981). In the context of higher education, it is crucial to promote pedagogical methods that prioritize the development of competencies, such as interpersonal skills or generic competencies, rather than focusing solely on specific content. These competencies, including soft skills, contribute to the creation of meaningful learning and

encourage student participation (Ragusa et al., 2022; Soria-Barreto & Cleveland-Slimming, 2020).

Studies identify faculty interpersonal competencies as an important factor in the credibility and effectiveness of teaching at the university level (Lankiewicz, 2014). Likewise, research in the nursing field has shown a positive evaluation of teachers who project confidence, foster an atmosphere of respect, practice self-criticism, provide constructive feedback, are organized, stimulate interest, are accessible, empathetic, and listen actively (Kotzabassaki et al., 1997; Navarro & Navarro, 2020; Shahsavari et al., 2015). These competencies are promoted through project-based learning approaches to foster team and collaborative work, bringing with them the development of attitudes such as conflict acceptance, self-confidence, solution orientation, and a positive attitude. However, to achieve the effectiveness of these methods, teachers need to have a high level of training (Konrad et al., 2021; Mendo-Lázaro et al., 2022; Praveena et al., 2020; Varela-Losada et al., 2014; Varvarigou, 2016). In addition, critical thinking stands out as a key component in these active methodologies (Valente, 2023). In this way, universities as a formative entity of a society assume the responsibility not only to educate in knowledge but also in soft skills, to prepare students for the professional and personal challenges demanded by the context. Consequently, curricula must be aligned with these demands, and teachers must have solid training in soft skills (Pertegal-Felices et al., 2011).

The studies analyzed in this research address the growing importance of soft skills in university teaching, highlighting their impact on the quality of education and the integral formation of students. The need for teachers to possess not only cognitive competencies but also socio-emotional skills that favor the creation of an interactive and student-centered learning environment is emphasized. Through various perspectives, studies show how the integration of these skills improves academic performance and prepares students for the challenges of the work environment. In this context, the evolution of scientific production on the subject is highlighted, with a notable increase in research in recent years.

The objective of this bibliometric analysis and the research questions that will guide the study are presented below, to delve into key trends and contributions related to teachers' soft skills and their influence on the quality of university teaching. Objective: To comprehensively examine the scientific production on the soft skills of teachers and their relationship with the quality of university teaching, identifying its temporal evolution, key sources of information, relevant authors, local and global impact on citation, most influential articles, thematic trends, and associated keywords, through a bibliometric analysis based on the Scopus and Web of Science databases, to provide a comprehensive overview of the state of the art and guide future research in this field.

Research questions:

Q1: What is the evolution of the annual scientific production in publications addressing teachers' soft skills and their impact on the quality of university teaching?

Q2: What are the main sources of information according to Bradford's Law on publications on teachers' soft skills and their relationship with the quality of university teaching?

Q3: Which relevant authors have published on teachers' soft skills and their relationship to the quality of university teaching?

Q4: What is the local citation impact of the authors in the bibliometric review of the soft skills of teachers and the quality of university teaching?

Q5: Which articles are the most cited globally in the bibliometric review about teachers' soft skills and quality of university teaching?

Q6: What is the thematic trend in publications about literature on teachers' soft skills and the quality of university teaching?

Q7: What are the keywords by thematic group within the reviewed literature on teachers' soft skills and the quality of university teaching?

MATERIALS AND METHODS

To examine trends and patterns in the scientific production of soft skills and quality in university teaching, a bibliometric analysis was carried out, as this type of study allows us to unravel the evolutionary nuances of a specific field while shedding light on emerging areas in that field (Donthu et al., 2021). This choice responds

to the need to identify the dynamics and structures of literature. The analysis was carried out considering key metrics such as publication volume, citation frequency, and the relationship between the two. In addition, the study performs an exhaustive mapping through the analysis of citations, co-citations, and bibliographic linkage, as well as an analysis of co-words and co-authors (Donthu et al., 2021).

For data collection, the PICOC (see table 1) model was used to identify the components associated with the problem through the identification of keywords:

Table 1. Selected keywords

P	I	C	O	C
Teaching styles	Soft skills		Quality teaching	University Teaching
Teaching strategies	Soft skills acquisition		Teaching competences	High Education
Learning Processes	Social skills		Teaching and Learning Processes	Higher education
Teaching in University	Personal skills		Teacher professional development	
Teacher effectiveness	Interpersonal skills		Teacher Effectiveness	
teacher skills	Interpersonal relations			
Professor	Non-technical skills			
Teacher training	Socio-emotional skills			
Teaching and learning processes	Socio-emotional skills			
	Transversal skills			

After the initial search, equations were extracted to identify relevant scientific literature in Scopus and Web of Science. The searches were conducted on July 04, 2024.

The equation used in the Scopus database:

TITLE-ABS-KEY ("teaching styles" OR "teaching strategies" OR "learning processes" OR "teaching in university" OR "teacher effectiveness" OR "teacher skills" OR "teacher training" OR "teaching and learning processes" AND "Soft skills" OR "soft skills acquisition" OR "social skills" OR "personal skills" OR "interpersonal skills" OR "interpersonal relations" OR "non-technical skills" OR "socio-emotional skills" OR "socio-emotional skills" OR "transversal skills" AND "quality teaching" OR "teaching competences" OR "teaching and learning processes" OR "teacher professional development" OR "teacher effectiveness").

The equation used in the Web of Science database:

((ALL=("teaching styles" OR "teaching strategies" OR "learning processes" OR "teaching in university" OR "teacher effectiveness" OR "teacher skills" OR "teacher training" OR "teaching and learning processes") AND TS=("Soft skills" OR "soft skills acquisition" OR "social skills" OR "personal skills" OR "interpersonal skills" OR "interpersonal relations" OR "non-technical skills" OR "socio emotional skills" OR "socio-emotional skills" OR "transversal skills") AND TS=("quality teaching" OR "teaching competences" OR "teaching and learning processes" OR "teacher professional development" OR "teacher effectiveness")) AND ALL=("teaching styles" OR "teaching strategies" OR "learning processes" OR "teaching in university" OR "teacher effectiveness" OR "teacher skills" OR "teacher training" OR "teaching and learning processes") AND TS=("Soft skills" OR "soft skills acquisition" OR "social skills" OR "personal skills" OR "interpersonal skills" OR "interpersonal relations" OR "non-technical skills" OR "socio emotional skills" OR "socio-emotional skills" OR "transversal skills") AND TS=("quality teaching" OR "teaching competences" OR "teaching and learning processes" OR "teacher professional development" OR "teacher effectiveness")).

After applying the equations, 123 scientific publications were recovered, distributed as follows: Scopus (n=105) and Web of Science (n=18). The inclusion criteria (see table 2) addressed studies focused on soft skills and university teaching, as well as original research in full-text format published in peer-reviewed journals, conference proceedings, books, and book chapters. It is important to clarify that the use of these databases is due to their high impact in the context of scientific research. Studies incorporating empirical data collection and analysis and published in English were also considered.

Table 2. Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Studies focused on soft skills in teachers and university teacher education.	Studies that do not focus on teachers' soft skills: Studies that do not directly address soft skills in the context of teachers or university teacher education will be excluded.

Original full-text studies in peer-reviewed journals or conference proceedings	Non-original or incomplete studies: Abstracts, opinion articles, non-systematic reviews, technical reports, theses, and studies that do not present empirical data or complete analyses will be excluded. Studies that have not been peer-reviewed or published in academic conferences: Studies that have not been peer-reviewed will be excluded, as well as those that are not published in scientific journals or academic conference proceedings.
Studies that include empirical data collection and analysis.	Studies that do not include empirical data: Studies that do not present original data collection or empirical analysis related to teachers' soft skills will be excluded.
Studies published in English.	Studies published in languages other than English: Studies that are not published in English will be excluded due to accessibility and review requirements for bibliometric analysis.

For the bibliometric analysis, 123 scientific publications were reviewed, and key data were normalized. These studies were exported in RIS and BibTeX formats. The bibliometric analysis was carried out using the Bibliometrix package, an R tool widely used for the visualization and evaluation of bibliometric indicators. This process made it possible to analyze the growth and trends in the publication of research on the object of study. Likewise, bibliometric metrics were applied, such as the h-index, the g-index and the local and global impact of the most relevant authors, with the aim of evaluating the influence and recognition of researchers in the field of study.

In addition, a keyword co-occurrence analysis was performed by means of thematic mapping, which allowed the identification of emerging trends and areas of interest in scientific literature. Co-authorship networks were evaluated, analyzing collaborations between researchers and the geographical distribution of publications, thus providing information on the most active research groups and international connections in the field. For the classification of the main lines of research, the methodology of thematic mapping was used, facilitating the organization of study stopics according to their relevance and evolution.

To visualize the results, Biblioshiny was used, a Bibliometrix graphical interface that allowed interactive exploration of the data and the generation of dynamic graphs on trends, citation networks and thematic maps.

RESULTS

Q1: What is the evolution of the annual scientific production in publications that address the soft skills of teachers and their impact on the quality of university teaching?

The evolution of annual scientific production is shown in Figure 1.

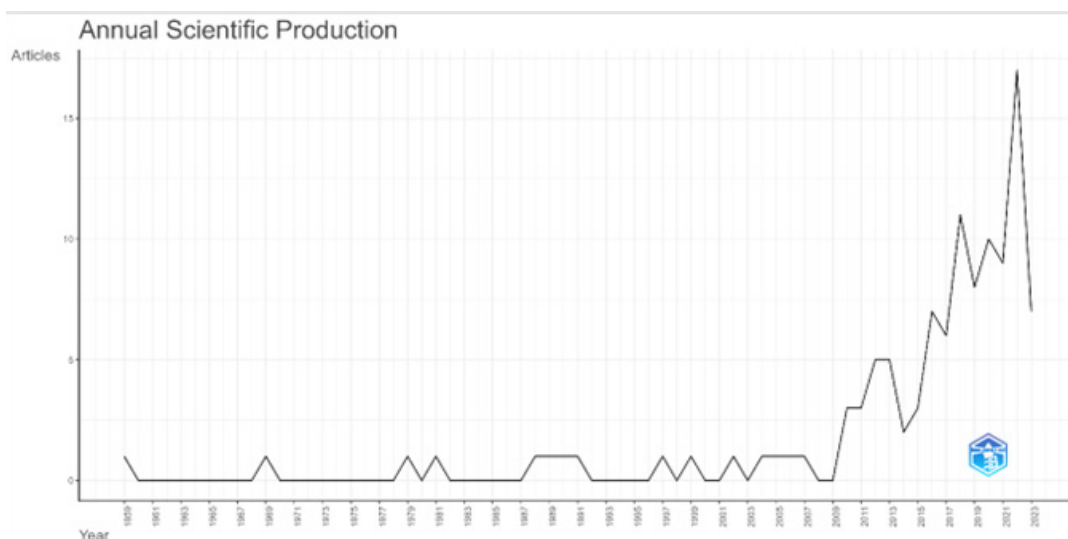


Figure 1. Trends in the evolution of annual scientific production

This bibliometric indicator shows the evolution of annual scientific production (see figure 1), which begins with a low number of articles in the 1950s and 1960s, with occasional publication in scattered years. From the late 1960s and early 1970s, there was an increase in researchers' interest in the subject, with sporadic contributions to literature.

However, from the late 1970s and early 1980s, there has been a notable increase in the number of articles published per year. This increase became more consistent in the 1990s and is maintained in the first decades

Kamin, Y.B.	2	3
Martín-Antón, L.J.	2	8
Saud, M.S.B.	2	3

Q4: What is the local impact of the authors on the citation of the bibliometric review of the thematic soft skills of teachers and the quality of university teaching?

Table 4 shows the bibliometric indicator of the local impact of several authors in the literature review of the subject.

Table 4. Authors' Local Impact

Authors	H_index	G_index	M_index	TC	NP	PY_start
(Ibrahim et al., 2018)	1	1	0.143	1	1	2018
(Praveena et al., 2020)	1	1	0.2	2	1	2020

Note: Author performance: H-index, G-index, and M-index analysis along with publication count. A consistent H-index of 1, a G-index of 1, and variable values of M-index, TC, NP, and PY_start. The H-index and G-index imply that each author has at least one publication with one citation each.

This table analyzes bibliometric impact metrics for individual authors. Although both authors have the same level of basic productivity according to the H-index and G-index, the difference in the M-index reflects variation in the dates of their initial publications. Praveena has a higher M-index due to the shorter number of years since his first publication, showing that his impact has been more recent but proportionally faster than that of Ibrahim. This implies that both authors are relevant to the topic, although they are at different stages of development in their career or academic contribution.

Q5 Which articles are the most cited globally in the bibliometric review about teachers' soft skills and quality of university teaching?

Table 5 shows the bibliometric indicator of the most cited papers globally in the literature review. The two most cited papers are from (Ibrahim et al., 2018; Praveena et al., 2020), with 2 and 1 citations respectively. Both papers have relatively low citation rates per year, indicating a moderate level of impact in terms of citation frequency over time. The other papers listed have not received citations to date, this indicates that they have not yet had a significant impact on academic literature.

Table 5. Most globally cited documents

Authors	Citations	TC/Year	Normalized TC
(Praveena et al., 2020)	2	0.40	10.00
(Ibrahim et al., 2018)	1	0.14	11.00
(Ragusa et al., 2022)	0	0.00	
(Konrad et al., 2021)	0	0.00	
(Bardach et al., 2022)	0	0.00	
(Triyanto, 2019)	0	0.00	
(López-Martín et al., 2022)	0	0.00	

Q6: What is the thematic trend in literature on the soft skills of teachers and the quality of university teaching?

Table 6 shows the bibliometric indicator of the thematic trends in the literature on “Soft skills of teachers and the quality of university teaching”.

Table 6. Trending topics

Categoría	freq	year_q1	year_med	year_q3
Methodology	7	1985	1990	1999
Personality	6	1992	1997	2014
Interpersonal communication	6	1993	2003	2014
Curriculum	8	1990	2004	2018
Communication	7	1995	2004	2009
Human relation	17	1991	2005	2015
Interpersonal relations	19	1994	2007	2014

The category “Methodology” has been a recurring theme, with a constant presence from the mid-1980s to the late 1990s. Likewise, “Personality” appears prominently between 1992 and 2014, suggesting a sustained interest in the relationship between personality and teaching skills. On the other hand, “Interpersonal

Communication”, this theme is relevant from the 1990s to the 2010s, because it is a prolonged focus on communication skills in the teaching context. “Curriculum and Education”, the literature on curriculum and education has shown a steady and growing presence from 1990 to 2018, due to its importance in the discussion on teaching skills and educational quality. Regarding “Professional Development”, aspects such as pedagogical practice, teacher training, and continuous learning have been relevant topics, especially from 2013 onwards, pointing to a growing interest in the constant improvement of teaching skills. “Learning and Teaching”, are topics related to the teaching and learning process, such as motivation, social skills, emotional intelligence, and project-based learning, and have gained importance in recent years, because it is an approach towards innovative and student-centered pedagogical practices. Thus, these results reflect the diversity and evolution of topics in academic literature on teaching skills and educational quality, showing both traditional topics and emerging areas of interest.

Q7: What are the keywords by a thematic group within the reviewed literature on the soft skills of teachers and the quality of university teaching?

Table 7 shows the frequency of certain keywords found in scientific literature related to teachers' soft skills and the quality of university teaching. These key terms are organized into clusters or thematic groups that represent common areas or themes within the literature reviewed.

Table 7. Word co-occurrences

Occurrences	Words	Cluster	btw_centrality	clos_centrality	pagerank_centrality
13	soft skills	1	830.201962	0.002079	0.0104667
13	teaching and learning	1	664.217238	0.00189753	0.01663344
10	higher education	1	811.332243	0.00203666	0.00998522
10	learning systems	1	646.034643	0.00182815	0.01296985
8	engineering education	1	384.416686	0.00170648	0.01070114
6	curricula	1	160.153635	0.00166389	0.00791076
6	problem-solving	1	82.7459758	0.00166389	0.00802035
4	engineering	1	88.8329521	0.0015949	0.00507883
5	project-based learning	1	513.33066	0.00175439	0.00412382
3	game-based learning	1	101.740682	0.00161812	0.00328693

Note: Thematic Mapping of Key Terms on Soft Skills in University Education

“Soft Skills” is the main theme of this bibliometric analysis, with an occurrence of 13 times. It is related to terms such as “teaching and learning”, “higher education”, “learning systems”, and “project-based learning”, this implies that the literature reviewed explores the importance of soft skills in the context of university education, learning, and teaching. “Engineering Education” this cluster relates to terms such as ‘engineering’ and ‘problem-solving’. So, there is a significant association between soft skills and engineering education, exploring how these skills relate to the specific field of engineering and problem-solving in this context. “Curricula” is related to terms such as ‘game-based learning’. This indicates a focus on how to integrate soft skills into educational curricula, exploring game-based learning strategies for the development of these skills. In summary, it demonstrates the interconnection between the soft skills of teachers, teaching, and learning in higher education, particularly in fields such as engineering, curriculum design, and the use of innovative approaches to learning.

DISCUSSION

This section is relevant and important, as it has been carried out through a thorough mapping to reflect on the findings obtained from the exploration of scientific trends and patterns (Deroncele-Acosta et al., 2021; Donthu et al., 2021). However, beyond merely corroborating these aspects, this research suggests that despite efforts to integrate these competencies into academic programs, gaps persist in their effective implementation and systematic evaluation.

The construct “soft skills” originated in the 1950s, when it began to be recognized that teacher effectiveness not only depended on technical knowledge but also on the ability to relate to students. The work (Medley & Mitzel, 1959) highlights the fact that factors such as empathy, group work, effective communication, and classroom climate management significantly influence student behavior and performance.

The studies (Margules & Keith, 1969) revealed a significant connection between supervisors' ratings and teachers' self-evaluations of their professional development. From these findings, it can be deduced that feedback directly influences teachers' (evaluated) perceptions of their professional performance (Taylor et al., 1988). These studies complemented these studies by identifying that the interpersonal skills of supervisors and their increase as an effect of training, subsequently materialized with the development of inventories to categorize higher-level teachers according to their level of efficiency, with the competencies evaluated being: interpersonal skills, teaching skills and personality traits (Nehring, 1990). This study found that teachers who incorporate active communication and collaboration strategies in their methodologies achieve greater student participation and engagement.

Soft skills, in the educational field, encompass competencies such as teamwork, communication, conflict resolution, and adaptability. These skills are essential to foster a collaborative and positive learning environment, which, in turn, directly impacts the quality of teaching, whether at the school or university level. Effective interaction between students and teachers facilitates the adaptation of students to the academic environment, promoting greater commitment and motivation toward learning. These interactions in the educational context have been extrapolated to the workplace.

The importance of soft skills in higher education has become increasingly evident, especially in the quality of university education. For example, (Den Brok et al., 2002) demonstrated that the diagnosis and improvement of the quality of teaching behavior can be positively influenced by the integration of soft skills in the university curriculum (Murray & Lonne, 2006) affirm this perspective, which is corroborated by those who explore the innovative use of the web to develop soft skills in higher education students, arguing that these soft skills are fundamental for success in business and academic environments.

Another study on students with brain tumors highlights the need for soft skills to adapt and overcome challenges, both academic and personal, demonstrating the relevance of these competencies in promoting inclusive and quality education (Long et al., 1999). In line with these findings, the authors examine the attitudes and anxiety levels of medical students towards communication in clinical situations, showing that effective communication and soft skills are crucial for professional development in highly specialized fields. This research highlights the intersection between soft skills and educational quality, suggesting a holistic approach to university education that transcends technical knowledge to include interpersonal and adaptive competencies (Loureiro et al., 2011).

Since 2010, socioemotional skills have been linked to general intelligence, which is required as part of the professional profiles during initial training (Pertegal-Felices et al., 2011). To these results, it is evident that teaching effectiveness requires the presence of two conditions: socioemotional skills and cognitive competencies, one dependent on the other (Hamid et al., 2012). The authors also stress the importance of unifying the competencies of university teachers concerning socioemotional skills and implementing training programs on emotional intelligence (Carbonero et al., 2016). And that teaching processes should incorporate methodological strategies of games as pedagogical resources, which enhance problem-solving and conflict-resolution skills (Amara & Saberi, 2018). Soft skills influence the performance of educational management having a significant impact on educational actors such as teachers, and students, among others, promoting healthy environments (Morales Yanayaco et al., 2024).

In summary, the importance of soft skills in higher education is indisputable. It should be emphasized that these skills are fundamental for students' academic and professional success, and their integration into the curriculum significantly improves the quality of teaching, preparing students to face the challenges of both work and academic environments. Effective teaching and student learning require a harmonious interdependence between socioemotional and cognitive skills, which are key elements in fostering an educational environment that promotes the holistic growth of students. In addition, it is essential that to enhance the development of soft skills, innovative pedagogical strategies such as games and other problem-solving resources should be adopted to encourage interactive and participatory learning that responds to the demands of contemporary education.

CONCLUSIONS

In conclusion, the extensive research analysis conducted on the study constructs from 1950 to 2022 reflects the diversity and growing evolution of research in the university environment in different professional careers. The studies show the preponderance in the areas of curriculum and education, learning-teaching, personality,

interpersonal communication, and professional development since university entities have the purpose of preparing students for the challenges of the working and academic world.

Likewise, the research highlights the importance of soft skills in university teaching, not only in the personal and professional development of the student but also in teaching effectiveness, therefore, skills such as effective communication, empathy, and adaptability are essential for quality education. Therefore, the university teacher needs to implement soft skills as an important resource given the importance and significance it must manage the learning of their students, thus achieving another perspective that reorients their pedagogical strategies for the benefit of university students.

Considering the results obtained, it is recommended that university teachers include the development of soft skills as a personal resource to implement it as an innovative pedagogical strategy in the university curriculum. It is also important that university entities deepen the study with the production of scientific articles from different approaches so that the contribution in this field can be more thorough, and the behavior of this study variable can be analyzed comprehensively, considering different aspects in the research, contributing significantly to the university community.

Study makes a significant contribution to the academic field; however, it is not without limitations. Its reliance on literature available solely on the Scopus and Web of Science databases may exclude relevant studies from other sources. Additionally, the variability in the definition and measurement of soft skills could impact the comparability of the analyzed studies. Likewise, the time factor favors publications of longer standing over current research regardless of their quality or innovative proposal. Current metrics do not consider the potential impact of emerging works. In addition, there are barriers to access to publications that create disparities in the visibility of publications.

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Conflict of interest

The authors declare that they have no conflicts of interest.

Declaration of responsibility of authorship

We, the authors of the aforementioned manuscript, DECLARE that we have directly contributed to its intellectual content, as well as to the genesis and analysis of its data; therefore, we are able to take public responsibility for it and accept that their names appear on the list of authors in the order indicated. Furthermore, we have complied with the ethical requirements of the aforementioned publication, having consulted the Declaration of Ethics and Publication Malpractice.

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