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A Decade of Mentorship in Teaching Internship: A Scopus-Based Bibliometric Mapping of Supervisory Practices (2015–2025)

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Abstract. Mentorship and supervision in practice teaching play a critical role in shaping pre-service teachers' professional competence, identity formation, and classroom readiness. Despite the rapid expansion of scholarships on practicum mentoring, the literature remains conceptually fragmented and lacks a comprehensive synthesis of its intellectual structure. Addressing this gap, this study aims to map, identify, and analyze the evolution and thematic organization of research on mentorship and supervision in teaching practicum. A bibliometric and science-mapping analysis was conducted using Scopus-indexed publications from 2015–2025 retrieved through a systematic TITLE-ABS-KEY search strategy. Bibliometric indicators—including publication trends, document types, productive contributors, and keyword co-occurrence networks—were analyzed using Scopus Analyzer and VOSviewer. The results reveal a steady increase in research output across the decade, with journal articles and Social Sciences dominating the field. Network analysis identifies four major thematic clusters structuring the literature: (1) cooperating teachers and situated mentorship, (2) university supervision and institutional mediation, (3) feedback and professional identity development, and (4) power relations and emotional dimensions of mentoring. These patterns demonstrate a paradigm shift from procedural supervision models toward relational, dialogic, and ethically grounded approaches to practicum mentorship. This research provides the first comprehensive bibliometric analysis on the literature of mentorship and supervision in practice teaching. It identifies the intellectual landscape of the field and indicates emerging research trends that are important for teacher education policy and the promotion of learning through practicum experiences.

Keywords: mentorship; teaching practicum; supervision; bibliometric analysis; teacher education

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1. Introduction

Practice teaching, also called "practicum," "student teaching," or "teaching internship," is the last stage of preparation for becoming a teacher, where theory learned by pre-service teachers is put into practice in real schools with guidance. Mentorship and supervision are key elements of teacher preparation, as they allow young teachers to develop instruction, assessment, resilience, and professional identity. Hence, the mentorship relationship between mentor and mentee has emerged as the very essence of practice teaching, the primary vehicle of learning to teach, rather than merely as a supplement to it (Borko & Mayfield, 1995; Clarke et al., 2014).

Historically, the literature on practicum supervision has distinguished between the roles of cooperating teachers and university supervisors. Cooperating teachers were viewed as school-based mentors, while university supervisors were viewed as institutional mediators who judged teaching and ensured that practicum experiences were congruent with teacher education standards (Borko & Mayfield, 1995). However, over time, the literature has indicated a great deal of variability in the role of cooperating teachers in teacher education. Mentoring was influenced by the particularities of the school, the credentials of the mentors, and the needs of the institutions (Clarke et al., 2014). More contemporary perspectives indicate that models of practicum supervision continue to change, from quasi-residency models to alternative and accelerated practicum models. It is clear that mentoring is a dynamic and changing process rather than a static supervisory role (Carmi et al., 2024).

Apart from the traditional supervisory process through roles, mentoring is now viewed as an ongoing, dynamic, and interactive process primarily mediated by feedback. Feedback is now generally regarded as a significant facilitator of learning as long as it helps to specify learning purposes, direct learning, and facilitate self-regulation (Hattie & Timperley, 2007). In teaching, feedback is manifested as an observation, post-observation, co-assessment, and mentoring conversation. Data gathered from research studies indicate that the quality, timing, and conversational quality of feedback received from cooperating and university supervisors influence the learning paths of pre-service teachers (Hudson, 2004; Maes et al., 2022). Mentoring quality reviews have also revealed that good mentors focus more on facilitating feedback, scaffolding, and dialogue instead of making judgments about their mentees (Ellis et al., 2020).

However, recent research has started to focus more on the emotional and psychological aspects of teaching internships. Practicum has been considered an emotionally demanding experience in teacher preparation, characterized by excitement, doubt, and nervousness. Research has indicated that student teachers experience emotional highs and lows during their practicum, which is directly associated with their feelings of control and the value of teaching situations (Becker et al., 2025). In order to reduce the emotional demands of teaching, different approaches to mentoring have been proposed to support novice teachers in their transition to full professional practice. For instance, collaborative mentoring has been proposed as an approach to reduce teaching anxiety by

providing emotional support, reflection, and guidance in teaching situations during practicum (Nguyen et al., 2025). In addition, different mentoring models, like gradual responsibility frameworks, have been used to illustrate the potential of different mentoring strategies, like ongoing dialogue, to promote teaching confidence and professional development of pre-service teachers (Collet et al., 2025).

Mentoring involves more than just listening and providing a shoulder to lean on; it also contributes to the degree to which beginning teachers confidently envision themselves within the profession and the ease with which they transition into the role of teaching. The findings suggest that internships can increase teaching self-efficacy, particularly when interns are mentored by supportive mentors and when opportunities for active reflection are provided. For example, research has shown that longer teaching internships can enhance and consolidate pre-service teachers' sense of efficacy, particularly when combined with a commitment to self-directed learning (Liu et al., 2025). This highlights the importance of recognizing that the effectiveness of practicum experiences depends not only on the design of internships but also on the quality of mentoring and learning opportunities embedded in these experiences.

The new thinking about practicum mentoring is that it illustrates how power relations quietly inform the entire process. Because mentoring involves both development and evaluation, the practicum becomes a space where power, professional development, and student teacher agency intersect. Increasingly, scholars are recognizing that mentoring is not simply a technical aspect of supervision but a dialogical, ethical process that is grounded in trust, talk, and ongoing professional negotiation (Wang & Odell, 2002; Pattison-Meek, 2024). This perspective implies that who wields power in practicum contexts may impact what pre-service teachers feel free to say, test out, and learn during their practicum internships.

Similarly, research suggests that the process of applying pedagogical theory to practice is mediated by context, sociocultural factors, and the role of the mentor, particularly in terms of teaching and learning decisions (Ketkumbonk et al., 2025; Tandas, 2025). This notion is supported by the findings of Tubal et al. (2025), who conducted a phenomenological study that demonstrates how feedback in practicum is not simply an evaluative statement but a highly relational, corporeal, and affectively charged experience that can either support or undermine pre-service teachers depending on how it is received and managed. Their findings highlight how feedback is embedded in the lived experiences of time, space, body, relation, and materiality, demonstrating how practicum mentoring practices can either facilitate reflective professional development or constrict student teacher confidence, agency, and pedagogical flow.

In spite of the increasing discussion about mentorship and supervision in practice teaching, the area still feels disjointed. It can be viewed as having different strands, such as models that frame supervision in terms of roles, mentoring processes that are shaped by interactions, emotional facets of teaching internships,

and critical views of power relations. A look at Scopus results reveals that there was a marked rise in research articles about mentoring in practicum and the growth of pre-service teachers between 2015 and 2025. Although the number of articles in this area was increasing, it was still disorganized, making it difficult to recognize the dominant themes, key authors, or emerging trends to the forefront. In new and expanding research fields, bibliometric research can provide a solution to the chaos. It can help in the identification of patterns in the growth of publications, key authors in the area, and their interconnectedness, utilizing techniques such as keyword co-occurrence (Aria & Cuccurullo, 2017; van Eck & Waltman, 2010). By utilizing science mapping in mentorship and supervision in teaching internships, it can be seen how the topic of supervision in teaching internships was researched in the past, what the dominant themes in the literature are, and what new themes will shape the area in the future.

Despite the increasing scholarly attention to mentorship and supervision in practice teaching, limited effort has been made to systematically synthesize how this research field has evolved over time. While many empirical studies have examined mentoring roles, feedback practices, emotional experiences, and supervisory relationships during practicum, few studies have mapped the intellectual structure of mentorship research by identifying its dominant themes, influential contributors, and conceptual relationships. As a result, the field lacks a comprehensive overview that clarifies how different strands of mentorship research are interconnected and how scholarly attention has shifted across time. This research applies a bibliometric analysis to Scopus-indexed research on mentorship in teacher internship programs from 2015 to 2025. The goal is to provide an evidence-based platform that promotes improved mentor preparation, supervision, and future research on ethical, dialogical, and learner-focused mentorship in teacher education.

The study seeks to answer the following questions:

- 1) Who are the top authors in mentorship and supervision in practice teaching, taking into account author productivity, institutional affiliation, country of origin, and publication outlets?
- 2) What are the publication patterns that characterize Scopus-indexed research on mentorship and supervision in practice teaching from 2015 to 2025?
- 3) What are the key conceptual themes and clusters that emerge from the literature using keyword co-occurrence analysis?
- 4) How have the top themes in research on mentorship and supervision in practice teaching evolved from 2015 to 2025?

2. Methodology

2.1 Research Design

This study employs a bibliometric approach to explore the growth of practice teaching mentorship and supervision articles in Scopus, how ideas are structured, and how themes are organized in mentorship and supervision in practice teaching articles over time. The bibliometric study is a quantitative bibliometric study that uses statistical and network science techniques to study patterns in knowledge

production, who influences knowledge production, and how ideas are connected in a particular knowledge domain (Aria & Cuccurullo, 2017; Donthu et al., 2021).

Bibliometric studies are appropriate in knowledge domains that are rapidly evolving, have many ideas, and span different disciplines, such as teacher practice and supervision in practice teaching settings. In such settings, it may be difficult to conduct a systematic review of mentorship and supervision in practice teaching settings due to their narrow scope and subjectivity, while bibliometric studies provide a systematic and replicable means of synthesizing large volumes of knowledge in mentorship and supervision in practice teaching settings (Zupic & Čater, 2015). The bibliometric study combines performance study with science mapping, providing a broad view of how knowledge in mentorship and supervision in practice teaching settings evolves over time (van Eck & Waltman, 2010).

This research adheres to the conventional method of bibliometric analysis and adopts a descriptive-relational approach. By employing this methodology, it is possible to examine the development of research on mentorship and the structuring of its ideas concurrently (Aria & Cuccurullo, 2017; Donthu et al., 2021).

2.2 Data Source and Search Strategy

The study sourced data only from Scopus, a choice made due to its comprehensive coverage of peer-reviewed journals, good presence in education and social sciences, and its standardized bibliographic and citation metadata, which are perfect for bibliometric analysis. Scopus is generally considered reliable for science mapping studies, particularly in interdisciplinary fields such as teacher education (Mongeon & Paul-Hus, 2016).

To guarantee well-defined terms and appropriate analysis, a structured search approach was developed. The search was conducted on the TITLE-ABS-KEY fields (title, abstract, and author keywords) and centered on two key terms: (1) contexts of practice teaching and (2) mentoring/supervisory relationships. For practice teaching, terms including practicum, practice teaching, student teaching, and teaching internship were employed. For mentoring, terms including mentoring, supervision, cooperating teachers, university supervisor, and school-based mentor were integrated.

To maintain disciplinary focus and reduce conceptual noise, the search was further restricted to the Social Sciences subject area and to exact indexed keywords associated with teacher education and practicum contexts. The final search query applied in Scopus was as follows:

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TITLE-ABS-KEY ( practicum OR "practice teaching" OR "student teaching" OR "teaching internship" )
AND TITLE-ABS-KEY ( mentor* OR supervision OR "cooperating teacher" OR "university supervisor" OR "school-based mentor" )
AND PUBYEAR > 2014 AND PUBYEAR < 2027
AND ( LIMIT-TO ( SUBJAREA, "SOCI" ) )
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AND (LIMIT-TO (EXACTKEYWORD, "Practicum") OR "Mentoring" OR "Student Teaching" OR "Teaching Practicum" OR "Supervision" OR "Pre-service Teachers" OR "Teaching")

The publication window 2015–2025 was intentionally selected to capture contemporary developments in practicum supervision, including the diversification of mentoring models, the integration of technology in supervision practices, and increasing scholarly attention to relational, emotional, and power-related dimensions of mentoring.

2.3 Inclusion and Exclusion Criteria

An explicit set of inclusion and exclusion criteria was employed to ensure that the work remained relevant from a conceptual viewpoint, had high data quality, and ensured consistency in the analysis with regards to best practice in bibliometric studies (Zupic & Čater, 2015; Donthu et al., 2021). The data set was specifically concerned with publications listed in Scopus that had a direct focus on mentorship, supervision, and mentoring relationships in teacher practicum, practice teaching, and teaching internship settings.

Relevant materials were peer-reviewed scholarly output in the form of journal articles, review papers, conference papers, and book chapters published from 2015 to 2025. These types of materials were considered to have a direct relationship with both empirical and conceptual aspects of practicum mentorship.

Publications were excluded if they (1) examined internships or mentoring in other professional areas (such as medicine, nursing, or engineering) that did not involve teacher education, (2) reported on teacher professional development that was not clearly focused on practicum or supervisory relationships, or (3) lacked essential bibliographic information, such as abstracts or keywords, necessary for bibliometric analysis. On the basis of these criteria, the set was kept conceptually consistent while also remaining suitable for systematic science mapping.

2.4 Data Analysis Procedures

2.4.1 Text rewritten:

The bibliometric study employed the use of VOSviewer, a software specifically designed for creating and analyzing bibliometric networks. The community of researchers prefers the use of VOSviewer because of its ability to process large bibliographic data and present it in a visual form of co-authorship, co-citation, and keyword co-occurrence, as cited by van Eck & Waltman (2010). To supplement this, Scopus Analyzer offered further descriptive statistics to help validate performance indicators related to publication trends, sources, and geographic distribution.

Study progressed in two ways that complemented each other:

First, a descriptive performance analysis was conducted to evaluate the development of publications and the measure of productivity. This stage included annual publication, the categorization of documents, the leading journals and sources, and the most productive authors, institutions, and countries. These performance measures provided a macro perspective on the development

trajectory and dissemination of research on mentorship and supervision in practice teaching.

Science mapping was also performed as a step in the science mapping process, where a keyword co-occurrence network was used to find the main and emerging thematic patterns in the field. This technique involves monitoring the number of times keywords appear in conjunction with each other in research papers to find conceptual associations and groups (Cobo et al., 2011; van Eck & Waltman, 2010). To ensure that the results do not become overly complex, a minimum occurrence threshold was used to ensure that only frequently used concepts are highlighted. A thesaurus file was also used to group similar concepts (for example, practicum and practice teaching, mentor teacher and cooperating teacher) to reduce fragmentation in the network.

With the use of this technique, the researchers can analyze both the performance aspect of who is publishing, where, and how often, as well as the conceptual aspect of what influences the mentorship research field.

2.5 Reliability and Validity Considerations

Methodological rigor was strengthened through transparent documentation of the search strategy, inclusion criteria, and analytical procedures, thereby enabling replicability and facilitating comparison with related bibliometric studies. The exclusive use of the Scopus database ensured consistency in citation indexing and metadata formatting, which enhances the internal reliability of bibliometric analyses (Mongeon & Paul-Hus, 2016).

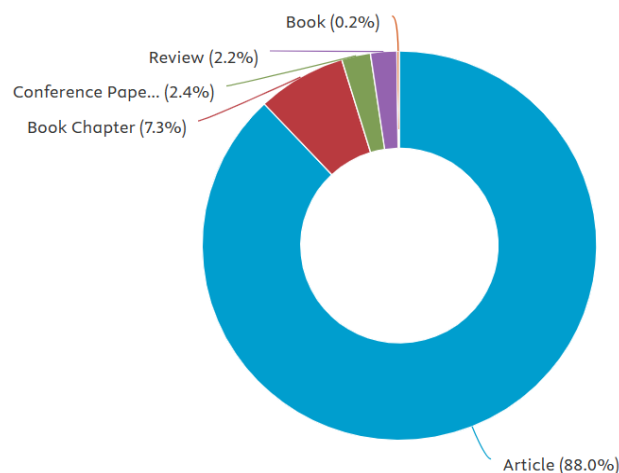
Although bibliometric analysis does not evaluate the methodological quality of individual studies, it provides a valid macro-level representation of scholarly influence, conceptual development, and research trajectories when bibliographic data are systematically curated and analytically constrained (Donthu et al., 2021).

2.6 Ethical Considerations

In this piece of work, only free-access bibliographic information available in the Scopus database was used. There was no need to use personal information or to deal with human subjects, and therefore, no ethics approval was necessary. All processes have been in line with best practice in research ethics and integrity.

3. Results and Findings

3.1 Document Types and Knowledge Consolidation in Mentorship Research

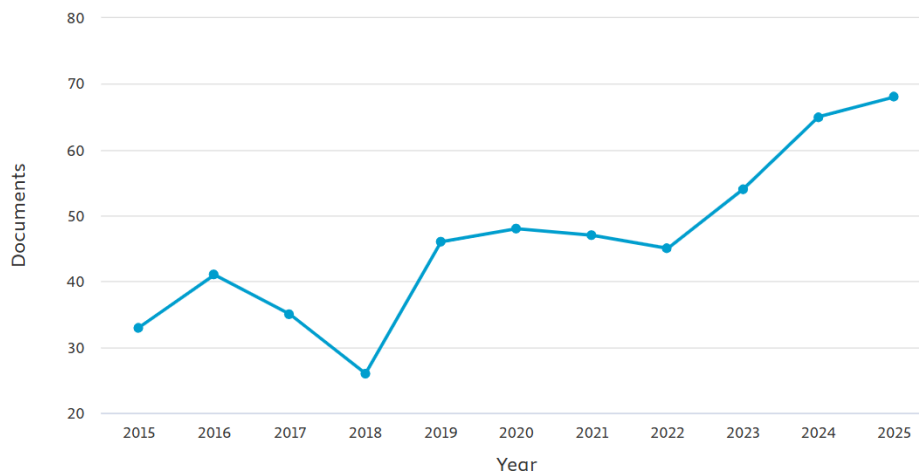


Document type distribution demonstrates a strong dominance of journal articles (88.0%), followed by book chapters (7.3%), conference papers (2.4%), and review articles (2.2%), with books comprising only 0.2% of the total corpus. This pattern indicates that research on mentorship and supervision in practice teaching has reached a stage of conceptual consolidation, where scholarly discourse is primarily disseminated through peer-reviewed journals rather than exploratory or practitioner-oriented outlets.

From a bibliometric perspective, the prevalence of journal articles indicates that the area of study has progressed beyond the level of basic idea generation and entered the stage of theoretical development and testing (Donthu et al., 2021). Studies on mentorship in practicum contexts are currently exploring complex ideas such as the quality of feedback, the process of professional identity development, the role of emotional labor, and pre-existing power structures, which requires sophisticated methodology and peer review. Compared to newer fields of study that are conference paper-dominant, the current trend indicates a mature and academically established area of study (Zupic & Čater, 2015).

Even though review articles remain a small proportion, this indicates a large gap. Given the rapid growth of empirical studies, there is a shortage of integrative syntheses, making bibliometric and science mapping approaches all the more important for structuring the conceptual framework and themes that emerge within this field.

3.2 Temporal Evolution of Mentorship and Supervision Scholarship

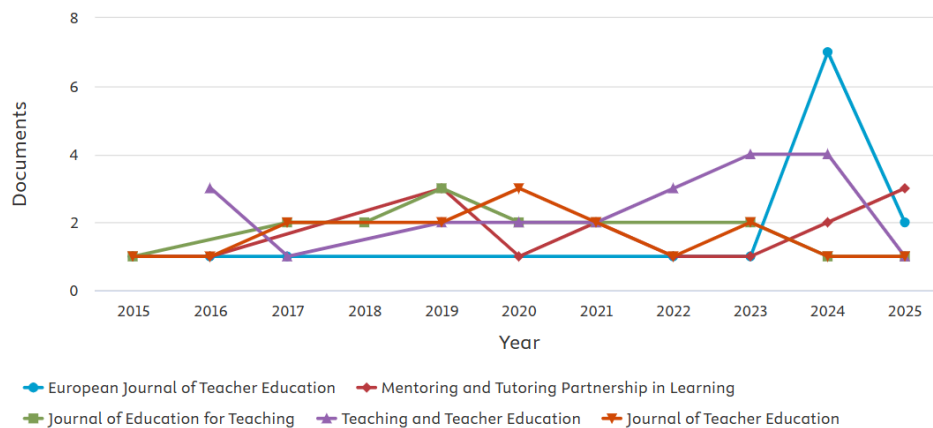


Based on the annual rate of publication from 2015 to 2025, it can be seen that there was a steady growth in the number of publications, increasing over time. It can also be seen that the rate at which the publications have been increasing over the years has been picking up. There was a marked increase in the number of publications in the year 2019 when the number of documents published was 46. From then onwards, the number of documents published annually was increasing, reaching nearly 70 documents in the year 2025.

The growth in the number of publications from a state of low, incremental growth to more intensive scholarly activities may be seen in the backdrop of global reforms in the way practice-based teacher education is viewed and implemented, as highlighted in the research by Clarke et al. (2014) and Ronfeldt et al. (2018). There was also a marked growth in the number of publications in the post-2019 period, when there was a focus on mentoring in crises, especially in the backdrop of the COVID-19 pandemic.

Notably, the fact that the research is continuing to grow at a steady rate even after the pandemic-related disruptions suggests that research on mentorship is not a blip on the radar screen but is instead becoming an integral part of the scholarship of teacher education. This is in line with the shift towards clinical and relational approaches to teacher education, where mentoring is at the center of teacher education rather than a side show or extra help (Borko & Mayfield, 1995; Wang & Odell, 2002).

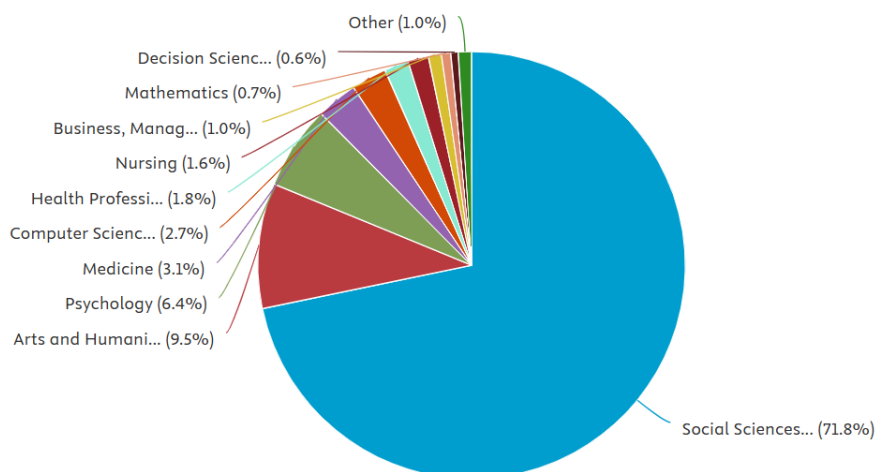
3.3 Core Journals and Epistemic Communities



Source-level analysis indicates that mentorship and practicum research is concentrated within a small group of high-impact teacher education journals, notably *Teaching and Teacher Education*, *Journal of Teacher Education*, *European Journal of Teacher Education*, *Journal of Education for Teaching*, and *Mentoring & Tutoring: Partnership in Learning*.

The sustained productivity of *Teaching and Teacher Education*, with visible publication peaks in 2023–2024, suggests the presence of special issues and thematic concentrations focused on mentoring quality, supervision models, and practice-based teacher education. These journals function as epistemic anchors, shaping theoretical debates and methodological standards within the field. The way publications are represented in these outlets also illustrates the formation of a unified scientific community that shares ideas, approaches, and policy issues. Sjølie (2017) points out that this representation can also have the negative effect of locking in dominant approaches. That's where bibliometric studies come in handy: they can help detect underrepresented perspectives and emerging research fields.

3.4 Disciplinary Orientation and Interdisciplinary Expansion

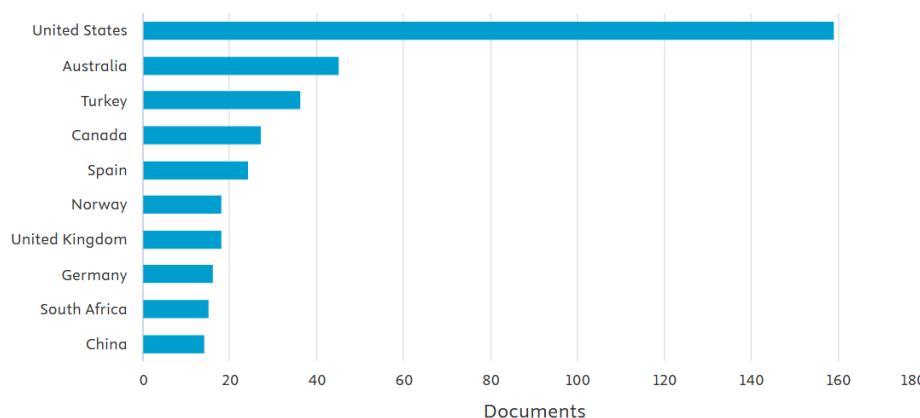


The subject area distribution reveals that Social Sciences dominate the literature (71.8%), followed by Arts and Humanities (9.5%), Psychology (6.4%), Medicine (3.1%), and Computer Science (2.7%). This disciplinary profile underscores the fundamentally pedagogical, relational, and sociocultural orientation of mentorship research in practice teaching.

The prominence of Psychology reflects growing interest in affective dimensions of practicum, including anxiety, motivation, self-efficacy, and emotional regulation (Becker et al., 2025; Izadinia, 2016). Contributions from Medicine and Health Professions indicate cross-disciplinary borrowing from clinical supervision and residency models, particularly in relation to structured mentoring and progressive responsibility (Collet et al., 2025).

Although still marginal, the presence of Computer Science signals emerging engagement with technology-enhanced supervision, online mentoring, and digital feedback systems—an area likely to expand as hybrid and remote practicum models become normalized.

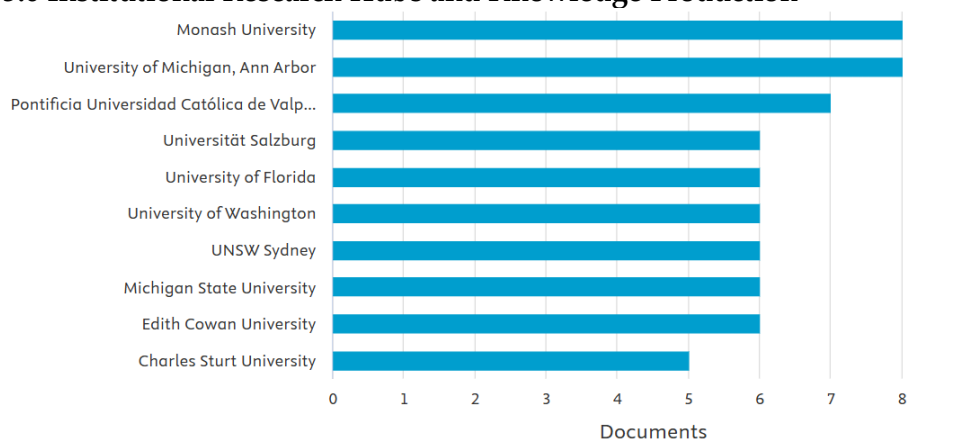
3.5 Geographical Concentration and Global Inequities



Country-level analysis reveals a pronounced dominance of the United States, contributing approximately 160 documents, followed by Australia, Turkey, Canada, Spain, Norway, the United Kingdom, Germany, South Africa, and China. This concentration reflects the strong research infrastructure and publication culture of Anglophone countries, particularly the United States, where teacher education research is closely tied to accreditation systems and policy reform. Australia's prominence aligns with its sustained investment in professional experience research and mentoring standards.

However, the uneven global distribution highlights persistent geopolitical and epistemic inequities in knowledge production (Mongeon & Paul-Hus, 2016). While Turkey's growing contribution signals expanding participation beyond traditional research centers, the relative underrepresentation of Global South contexts suggests the need for more contextually grounded and culturally responsive studies of mentorship and supervision.

3.6 Institutional Research Hubs and Knowledge Production

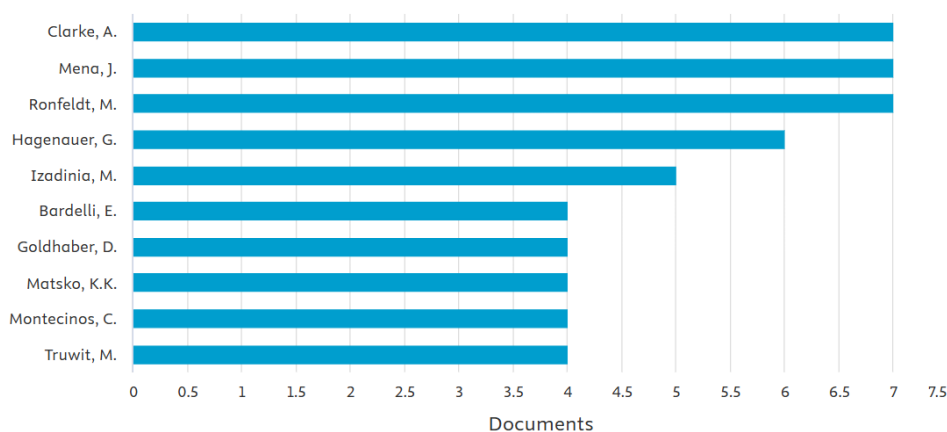


Institutional productivity analysis emphasizes Monash University and the University of Michigan, Ann Arbor, as leading producers, while other leading players include Pontificia Universidad Católica de Valparaíso, Universität Salzburg, the University of Florida, the University of Washington, UNSW Sydney, and Michigan State University.

The concentration of production around these institutions indicates the existence of enduring research communities that maintain continuous research activity in the area of mentorship and teacher education. Such research communities usually integrate doctoral education, global collaboration, and continuous publication, which cumulatively contribute to knowledge building (van Eck & Waltman, 2010).

The presence of these institutions reflects the nature of mentorship in the discipline, where senior scholars mentor early-career researchers, maintaining thematic cohesion while expanding the conceptual horizon over time.

3.7 Influential Authors and Intellectual Leadership



The presence of Clarke, A., Mena, J., and Ronfeldt, M. as prominent authors is significant, as they are the most prolific contributors to the field, with significant publication counting over the entire range of the dataset. Their contributions are

From this map, four different but interconnected clusters of themes emerge, indicating a move from a descriptive and role-based conceptualization of mentoring to a relational, developmental, and ethical conceptualization of mentoring.

Cluster A: Cooperating Teachers and Situated Mentorship

Cluster A focuses on the importance of *cooperating teachers, mentor teachers, field experiences, feedback, and professional learning*. It highlights the significance of school-based mentors in influencing preservice teachers' movement in the learning trajectory. The importance of cooperating teachers is based on the long-held notion that the practicum is a context for situated, authentic learning in real-world settings where novices construct professional knowledge by apprenticing themselves into authentic classroom practices, rather than merely learning about them in abstract lessons.

Based on the sociocultural perspectives of learning and apprenticeship, this cluster describes cooperating teachers as important practice mediators. They demonstrate teaching practices, make tacit teaching knowledge explicit, and deliberately scaffold novices as they apprentice themselves into classroom practices. Feedback is highlighted as the most important connecting factor among the components of this cluster, serving as the primary tool for mediating learning and its refinement. This is consistent with Hudson's 2004 mentoring model, which views effective mentoring as a deliberate 'dance' between modeling, feedback, reflection, and professional conversation.

The close relationships between feedback and field experience indicate that the effectiveness of mentoring is less dependent on formal supervision and more dependent on the quality, timeliness, and relevance of feedback from cooperating teachers in authentic classroom settings. This is consistent with findings that school-based mentors have a more significant daily influence on preservice teachers' development, particularly in influencing instructional decisions and classroom management, compared to university supervisors (Clarke et al., 2014).

Cluster B: University Supervision and Institutional Mediation

Cluster B focuses primarily on *supervision, practice teaching, teacher training, and reflective practice*. It highlights university supervisors as the institutional mediators between teacher education programs and actual teaching practice. Unlike cooperating teachers, whose mentoring process is an ongoing process in the classroom, university supervisors are at the crossroads between developmental and evaluative support.

The strength and consistency of this cluster point to the enduring nature of the tension within the process of practicum supervision, where supervisors have the responsibility to support student learning while at the same time evaluating student performance according to program and accreditation standards. As highlighted by Wang & Odell (2002), this tension often leads to structural tensions, where the power to evaluate can inhibit dialogue, experimentation, and the willingness to take risks among student teachers.

The significant interrelation between supervision and reflective practice suggests that the trend in modern supervision approaches is to emphasize the process of reflection as a tool for bridging theory and practice. However, the network also indicates that mediation is an integral component in defining the process of supervision, as it sustains hierarchical differences between supervisors and cooperating teachers. The cluster, therefore, suggests that the process of supervision is an institutionalized process, policy-driven, and informed by accountability, mandates, and assessment.

Cluster C: Feedback, Reflection, and Professional Identity

Cluster C brings together *reflection, teacher identity, peer mentoring, and assessment* in such a way that suggests a move towards more identity-centered, dialogic mentoring. Rather than conceptualizing mentoring as the transfer of skills from one individual to another, this cluster suggests mentoring as a collaborative learning experience in which preservice teachers negotiate their emerging identity as professionals.

Teacher identity is also important in this cluster in that it speaks to a developing understanding that practicum experiences are not simply about developing preservice teachers' skills but also significantly impact their beliefs, self-concepts, and legitimacy as professionals. Reflection is the "glue" in this cluster, facilitating a process by which preservice teachers make meaning of their experiences, tensions are negotiated, and professional identity is constructed.

Adding peer mentoring to this cluster suggests a shift away from strictly hierarchical mentoring relationships and more horizontal ones. Such mentoring relationships involve a shift in power dynamics, create a "safe" space in which preservice teachers might name their uncertainties, vulnerabilities, and complexities. This is similar to Izadinia's (2016) conceptualization of mentoring as a means by which identity is negotiated most effectively in terms of creating dialogue, recognition, and reflexivity, as opposed to compliance.

Cluster D: Power, Emotion, and the Human Dimension of Mentoring

Cluster D represents a new, conceptually significant frontier in mentoring research, with a focus on emotion, motivation, anxiety, humanity, and learning. Thus, the importance of this cluster highlights that mentoring research is increasingly concerned with the affective and power-laden aspects of practicum experiences, not just the cognitive or structural aspects.

In this understanding, mentoring is an emotionally constructed practice. Emotions such as anxiety, confidence, vulnerability, and belonging are significant in how preservice teachers respond to mentoring feedback, supervision, and the expectations of their profession. The relationship between emotions and learning suggests that emotions are not simply ancillary but integral to preserve teachers' professional development, particularly in high-stakes practicum experiences. Thus, this relationship suggests that emotions are integral to preserve teachers' professional growth.

The emergence of this cluster also suggests that mentoring research is increasingly concerned with the power aspects of mentoring. Since mentoring is a relationship with those in power, preservice teachers' autonomy, voice, and risk-taking propensity are often influenced by feelings of safety and judgment. This is in line with Pattison-Meek (2024) arguing for student voice and relational ethics, which seeks to advance mentoring practice that addresses power relations and facilitates dialogic engagement.

3.9 Organizing Mentorship Research in Teaching Internship: Roles, Feedback, and Power

Drawing on the clusters that were established from the analysis of the keyword co-occurrence, it has been established that mentorship is not composed of discrete activities. Instead, it consists of three strands that are interrelated: the role strand, the educational strand, and the relational strand.

Through the literature, it has been established that cooperating teachers are the primary organizers of in-school professional development during the practicum. In Cluster A, cooperating teachers are closely linked with field experience, modeling, and providing feedback. This indicates that they are the mediators of instructional practice. This is in line with the broad literature that has highlighted their significant impact on preservice teachers' instructional decisions and professional socialization (Borko & Mayfield, 1995; Clarke et al., 2014; Hudson, 2004).

University supervisors, as presented in Cluster B, are the ones who oversee mentorship from a program level, linking practicum experience to standards, reflection, and assessment. This indicates that they are essential in the development of preservice teachers. However, tensions persist with respect to their role as both mentors and assessors (Wang & Odell, 2002; Asplin & Marks, 2013). This explains why both in-school and university-based mentoring exist as separate constructs in literature.

Through both of these constructs, it has been established that the provision of feedback is central to mentorship. This is presented in Clusters A and C. This is in line with the literature that has established that feedback is a core component of preservice teacher development (Ellis et al., 2020; Hattie & Timperley, 2007; Maes et al., 2022). The power and emotional aspects of mentorship have also been established as separate constructs in literature. This is presented in Cluster D. This indicates that mentorship is emotionally positioned. This is in line with the literature that has established that mentorship is emotionally positioned and ethically positioned (Becker et al., 2025; Izadinia, 2016; Pattison-Meek, 2024).

4. Conclusion

In this review, employing bibliometrics and science mapping, it is revealed that the area of mentorship and supervision in practice teaching has developed into a theoretically well-supported, though rapidly changing, field. The area of the practicum, as mentioned earlier, is the core hub for teaching skills, professional identity, emotions, and institutional responsibility. The themes, as revealed, have

portrayed an evolution from the simple description of the roles and responsibilities of the cooperating teacher and university supervisor towards more complex, nuanced, and ethical portrayals of mentoring. The overall picture reveals a significant focus on Social Sciences, a high concentration of publications in a small group of high-impact publications and institutions, and a lack of global participation. Overall, it reveals an area that has developed into a well-supported field, though it still faces many knowledge gaps.

So, what is next for research in this area? It is recommended that instead of focusing on simple descriptions, it is time to develop theories that bring together ideas and trace the progress of individuals over time and contexts, focusing particularly on the underrepresented regions. For teacher education, it is recommended that structured mentor preparation for both cooperating teachers and university supervisors, focusing on dialogic feedback, ethics, and power and emotions, is an area that needs to be explored. It is recommended that policymakers and institutions rethink the area of practicum mentorship as an area that is not just a procedural exercise but an area worthy of recognition, support, and innovation, particularly for the creation of more equitable, humane, and transformative learning experiences for preservice teachers.

5. Conflict of Interest

The author declares no conflict of interest. The research was conducted independently, and no financial, institutional, or personal relationships influenced the design, data collection, analysis, or interpretation of the findings.

6. Declaration of AI Use

The authors declare that generative artificial intelligence tools were used in the preparation of this manuscript solely to support language refinement, structural organization, and academic clarity. All conceptualization, data collection, analysis, interpretation of results, and scholarly judgments remain the sole responsibility of the author. The use of AI did not replace critical academic decision-making and complied with ethical guidelines for responsible research and publication.

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