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UNVEILING PATTERNS AND TRENDS: BIBLIOMETRIC INSIGHTS INTO SUPERVISION'S IMPACT ON PROFESSIONAL DEVELOPMENT

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Abstract:

This bibliometric analysis delves into the intricate relationship between supervision and professional development, aiming to unveil underlying patterns and trends within the scholarly literature. The field of supervision, integral to fostering competence and skill enhancement among professionals, has witnessed substantial attention, indicating its significance in shaping professional growth. Understanding the evolving landscape of supervision's impact on professional development is crucial for optimizing strategies and enhancing outcomes in various domains. Despite the evident importance of supervision in professional development, there exists a need for a comprehensive bibliometric exploration to discern the underlying trends, influential authors, thematic clusters, and interdisciplinary engagements within this domain. Employing robust bibliometric methodologies, this study leverages data extracted from reputable scholarly databases such as Scopus to conduct an extensive analysis. The methodology systematically examines publication trends, authorship patterns, citation networks, and thematic clusters. Anticipated outcomes include the identification of influential authors, seminal works, and emerging thematic clusters. The study aims to uncover patterns indicating the evolution of supervision's impact on professional development over time. Insights into interdisciplinary collaborations, prevalent research themes, and potential directions for future inquiry are also expected outcomes of this comprehensive bibliometric analysis. This bibliometric investigation offers a panoramic view of the scholarly landscape, shedding light on the intricate interplay between supervision and professional

development. The expected results aim to enrich our understanding of the field, providing valuable guidance for practitioners, researchers, and policymakers to optimize strategies and foster professional growth across diverse domains.

Introduction

Supervision stands as a cornerstone in the realm of professional development, wielding a significant influence on the growth and efficacy of practitioners across diverse fields (Da Silva Pinheiro et al., 2014; Rankine, 2021; Severinsson & Sand, 2010; Tesfaw & Hofman, 2014; Valmas et al., 2020). Its multifaceted role in guiding, mentoring, and evaluating professionals has long been acknowledged as pivotal in shaping their competence and skill advancement. However, a comprehensive understanding of the intricate interplay between supervision and professional development warrants an in-depth examination of scholarly literature and a discerning analysis of bibliometric patterns and trends. This bibliometric exploration explores the vast corpus of literature concerning supervision's impact on professional development (Antonio, 2019; Coleman & Hyde, 2022). Hence, by employing rigorous bibliometric methodologies, this study aims to unearth, analyze, and synthesize the scholarly landscape, unveiling hidden patterns, emerging trends, and pivotal insights that underscore the relationship between supervision and professional growth.

The burgeoning interest in this domain is palpable, evidenced by the expansive array of research spanning various disciplines, methodologies, and theoretical frameworks (Nasution et al., 2022; Nordin et al., 2023). This study offers a panoramic view of the evolving discourse through bibliometric insights, identifying seminal contributions, key research clusters, influential authors, and the trajectory of knowledge dissemination in this field. Moreover, this analysis endeavors to bridge existing gaps in understanding by pinpointing areas of convergence, divergence, and potential avenues for future exploration. Thus, by discerning bibliometric patterns, this study aspires to offer valuable guidance to academicians, practitioners, and policymakers seeking to optimize the impact of supervision on professional development across diverse contexts (Antonio, 2019; Coleman & Hyde, 2022).

In summary, this paper aims to synthesize bibliometric insights to offer a comprehensive and panoramic view of the scholarly landscape surrounding supervision's profound influence on professional development, contributing to elucidating and advancing this critical nexus in the realm of professional growth.

Literature Review

The impact of supervision on professional development has been the subject of several studies, each offering valuable insights. A study on instructional supervision in New York City public schools revealed the prevalence of directive, checklist, and narrative approaches to supervision. It also highlighted the effectiveness of supervision and professional development models in schools, significantly increasing student achievement levels (Glanz, Jeffrey; Shulman, Vivian; Sullivan et al., 2007). Another study emphasized the importance of supervision in promoting enhanced clinical skills, knowledge, confidence, and evidence-based practice, particularly in rural and remote allied health services (Ducat et al., 2016). Additionally, a review of the

literature on supervision and its relationship with professional development suggested a strong connection between instructional supervision and professional development, emphasizing the need for improvement in supervisory practices (Tesfaw & Hofman, 2012). Furthermore, a study on the professional development of doctoral supervision highlighted the significance of workplace learning in enhancing supervisory skills and teaching performance (Huet & Casanova, 2022). Collectively, these studies underscore the significant impact of supervision on professional development. This includes its role in enhancing skills, knowledge, and confidence and its influence on teaching practices and student achievement.

The quality of supervision significantly impacts the effectiveness of professional development. Research has proven that effective supervision can improve work motivation, performance, and professional competencies. For instance, a study on implementing group and individual supervision techniques discovered tha group supervision significantly affected teachers' performance. In contrast, individual supervision emphasized improving and increasing teachers' performance (Wiyono et al., 2022). Additionally, effective supervision has been linked to improve patient outcomes, well-being, and continuing professional development (Martin et al., 2021). Furthermore, the relationship between instructional supervision and professional development has been highlighted, emphasizing the need for improvement in supervisory practices to enhance the quality of teaching and learning processes (Tesfaw & Hofman, 2012). Overall, the literature suggests that high-quality supervision is essential for promoting professional growth, enhancing performance, and ensuring the delivery of high-quality services.

Research Question

i. What are the research trends in supervision and professional development according to the year of publication?
ii. Who writes the most cited articles?
iii. What are the most subject areas published?
iv. Which source title has the most cited articles?
v. What are the popular keywords related to the study?
vi. What are co-authorship countries' collaboration?
vii. Who are the most co-citation and cited authors?

Methodology

Bibliometrics involves consolidating, managing, and scrutinizing bibliographic data obtained from scientifically oriented publications (Verbeek et al., 2002; Assyakur & Rosa, 2022;Alves et al., 2021). In addition to basic descriptive statistics like journal sources, publication years, and primary author categorization (Wu & Wu, 2017), it encompasses intricate methodologies, such as document co-citation analysis. Hence, conducting an effective literature review, constructing bibliographies, and ensuring reliable outcomes necessitates an iterative process involving suitable keywords, literature exploration, and rigorous analysis (Fahimnia et al., 2015).

The subsequent section details the adoption of search terms, initial screening of search outcomes, and subsequent result refinement. Journals featuring Clarivate Analytics Journal Citation Reports (JCR) impact factor often denote superior journal quality (Meier, 2011).

Therefore, the study focused on top-tier publications, recognizing their potential to shed light on the theoretical underpinnings shaping the research domain's evolution. For data collection, the study relied on the Thomas ISI Web of Science (WoS) database (Di Stefano et al., 2010), (Tan et al., 2014). Therefore, to ensure the inclusion of high-quality publications, the study selectively considered articles solely from meticulously peer-reviewed and esteemed academic journals, excluding books and conference proceedings (Liu et al., 2015).

Note that WoS has provided robust coverage since 1990, and Elsevier's Scopus encompasses a larger volume of journals. However, it predominantly includes recent articles (Aghaei Chadegani et al., 2013). Articles from the Social Science Citation Index (SSCI), Science Citation Index Expanded, and Arts and Humanities Citation Index from 2010 to December 2020 were scrutinized for analysis. The WoS Core Collection by Clarivate Analytics holds extensive citation and bibliographic records in social sciences and humanities, hence adopted for article retrieval in this study (Aghaei Chadegani et al., 2013), (Olijnyk, 2015).

Data Search Strategy

Table 1
The Search String.

Scopus	TITLE-ABS-KEY (supervision AND ("professional development" OR "professional growth")) AND (LIMIT-TO (PUBYEAR, 2018) OR LIMIT-TO (PUBYEAR, 2019) OR LIMIT-TO (PUBYEAR, 2020) OR LIMIT-TO (PUBYEAR, 2021) OR LIMIT-TO (PUBYEAR, 2022) OR LIMIT-TO (PUBYEAR, 2023)) AND (LIMIT-TO (LANGUAGE, "English")) AND (LIMIT-TO (SRCTYPE, "j"))

Table 2
The Selection Criterion Is Searching

Criterion	Inclusion	Exclusion
Language	English	Non-English
Timeline	2018 – 2023	< 2018
Literature type	Journal (Article)	Conference, Book, Review

Data Analysis

Data sets containing the study publication year, publication title, author name, journal, citation, and keyword in PlainText format were acquired from the Scopus database covering the period 2018 to December 2023 and were analyzed in VOSviewer software version 1.6.19. This software was utilized for the analysis and formation of maps by employing the VOS clustering and mapping methods. An alternative to the Multidimensional Scaling (MDS) approach, VOSviewer is focused on placing items in low-dimensional areas so that the distance between any two items accurately reflects their relatedness and similarity (van Eck & Waltman, 2010). This approach is similar to the MDS approach in this regard (Appio et al., 2014). In contrast to MDS, which focuses on calculating similarity measures like cosine and Jaccard indexes, VOS

uses a more appropriate method for normalizing co-occurrence frequencies. One such method is the Association Strength (ASij), which is computed as follows (Van Eck & Waltman, 2007):

$$ASij \; ¼ \; Cij,$$

$$Wiwj$$

which is "proportional to the ratio between the expected number of co-occurrences of i and j under the assumption that co-occurrences of i and j are statistically independent and the observed number of co-occurrences of i and j" (van Eck & Waltman, 2010). Thus, after lowering the weighted total of the squared distances between each pair of items, VOSviewer arranges the items in the shape of a map with the aid of this index. Appio et al. (2016) stated that the normalization of LinLog/modularity was used (Appio et al., 2016). Additionally, patterns based on mathematical correlations were discovered, and studies, including keyword co-occurrence, citation analysis, and co-citation analysis, were conducted by applying visualization techniques to the data set through VOSviewer.

Therefore, utilizing this index, VOSviewer arranges elements into a map by minimizing the weighted sum of squared distances between all pairs of elements. As outlined by Appio et al. (2016), the linlog/modularity normalization method was utilized. Subsequently, employing visualization techniques via VOSviewer with the dataset revealed patterns founded on mathematical relationships, facilitating analyses like keyword co-occurrence, citation analysis, and co-citation analysis. The evolution of a research field over time can be explored through keyword co-occurrence analysis (Zhao, 2017), effectively identifying prevalent topics across varous domains (Li et al., 2016). Conversely, citation analysis proves instrumental in recognizing pivotal research themes, trends, and methodologies. Illuminating the historical significance of a discipline's primary focus area (Allahverdiyev & Yucesoy, 2017). Note that document c0-citation analysis, among the frequently utilize bibliometric methods (Appio et al., 2016; Fahimnia et al., 2015; Liu et al., 2015), relies on network theory to generate map-dependent results that highlight the underlying data structure (Liu et al., 2015).

Result And Finding

Year of Publication
The presented graph, generated through Scopus Analyzer, paints a promising picture of a steadily flourishing field. The upward trajectory in the number of documents published from 2018 to 2023 speaks volumes about the growing interest and momentum within this domain. This surge can be attributed to a multitude of factors, each deserving exploration in this bibliometrics analysis article. Note that one potential driver is the influx of research funding. Targeted grants or initiatives might be fueling a plethora of projects, culminating in a subsequent rise in publications. Alternatively, the field's significance and potential applications could be gaining wider recognition, attracting a fresh wave of researchers and propelling project development. In addition, this newfound attention can also foster the evolution of the research landscape itself. Advancements in methodologies, theoretical frameworks, or data availability might open up exciting new avenues for investigation, as reflected in the increasing number of publications. Furthermore, the emergence of new platforms for scholarly dissemination should not be overlooked. Accordingly, the creation of dedicated journals,

conferences, or online repositories can provide additional channels for researchers to share their work, contributing to the overall upward trend.
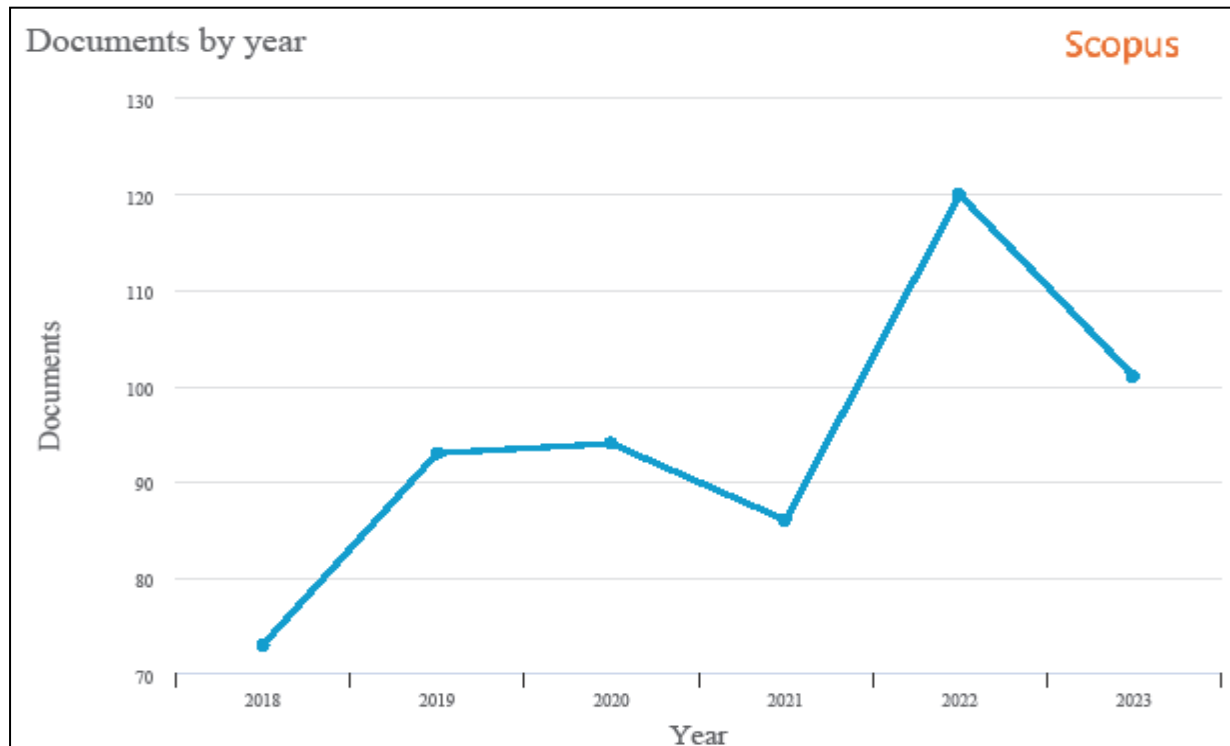

Figure 1: Distribution Chart Of Articles Published By Year.

However, a closer look reveals nuances within the curve; the steeper rise in publications around 2020 warrants specific attention. This surge might be attributable to unique events or trends within that year, such as the publication of a groundbreaking study, a thematically focused issue in a major journal, or a conference attracting a significant number of high-quality submissions. Delving deeper into the context surrounding 2020 can offer valuable insights into the field's specific dynamics and areas of intense activity. Additionally, analyzing the year-on-year variations in publication numbers can shed light on the field's internal fluctuations. Are there specific subfields experiencing accelerated growth? Do funding cycles or conference schedules influence publication patterns? Addressing these questions can enrich your understanding of the field's evolving landscape and internal mechanisms.

The observed upward trend carries significant implications for the field's future. The rapid acceleration of knowledge generation and dissemination holds immense potential for advancements and problem-solving within the field. However, this necessitates the implementation of robust quality control mechanisms to ensure the field's continued academic rigor and prevent a potential dilution with less impactful work. Furthermore, diversifying into subfields calls for effective communication and collaboration across these specialized areas to maintain a holistic understanding of the broader field. Finally, with the ever-increasing volume of research, developing efficient knowledge dissemination strategies becomes crucial. Hence, exploring open-access platforms, targeted outreach initiatives, and comprehensive data

repositories can ensure wider accessibility and maximize the real-world impact of the research being produced.
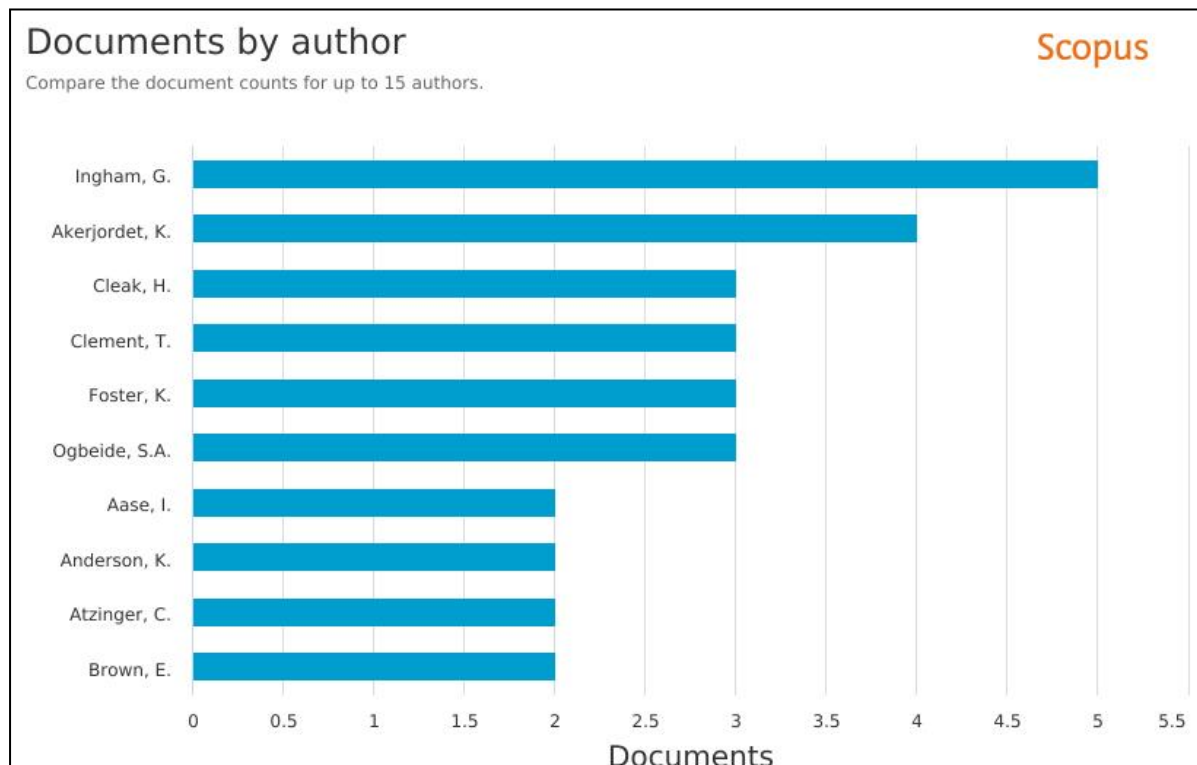
The Top 10 Authors

Figure 2: Top 10 Authors.

The bibliometric analysis conducted using Scopus Analyzer unveils a spectrum of prolific authors who have contributed significantly to supervision and professional development discourse. Based on the number of documents attributed to their names, the top ten authors present an intriguing insight into the scholarly landscape surrounding this critical nexus. At the forefront stands G. Ingham, whose authorship of five documents underscores a notable contribution, representing 0.88% of the documents analyzed. In addition, Ingham's extensive engagement signifies a deep involvement and sustained scholarly endeavor, potentially positioning their work as a cornerstone within the realm of supervision and professional development research.

Following closely, K. Akerjordet, H. Cleak, T. Clement, K. Foster, S.A. Ogbeide, I. Aase, K. Anderson, C. Atzinger, and E. Brown exhibit a comparable level of scholarly output, each contributing three or more documents. Though distributed across a range of percentages, their collective contributions portray a diverse yet interlinked tapestry of research within this domain. Furthermore, the distribution of prolific authors hints at a multifaceted discourse, encompassing varied perspectives and insights on supervision's impact on professional development. The diverse array of authors, each with their own unique contributions, suggests a rich and multifaceted exploration of this critical interface in professional growth. Moreover, the varied geographical origins or institutional affiliations of these authors may hint at the

global reach and relevance of this field, indicating its resonance across different contexts and locales.

The quantitative assessment underscores the prolific output of these top authors. Meanwhile, further qualitative examination of their works could elucidate specific themes, methodologies, or theoretical frameworks that have shaped the discourse. This deeper dive into the content and impact of their contributions could offer a nuanced understanding of their collective influence on the evolving landscape of supervision and professional development research. In essence, this analysis of the top ten authors underscores a vibrant scholarly milieu. It suggests the presence of a multifaceted and dynamic discourse on supervision and professional development propelled by the contributions of these prolific researchers.
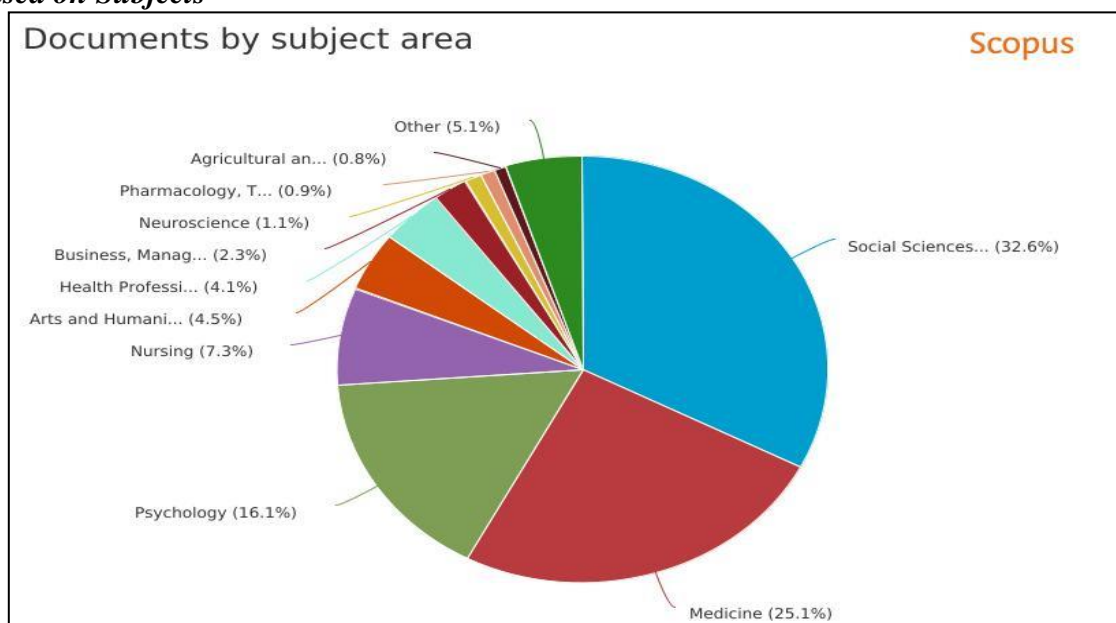
Based on Subjects

Figure 3: Top Contributing Publications Based On Subjects.

SUBJECT AREA	Number of Documents	Percentage (%)
Social Sciences	284	32.6
Medicine	219	25.1
Psychology	140	16.1
Nursing	64	7.3
Arts and Humanities	39	4.5
Health Professions	36	4.1
Business, Management and Accounting	20	2.3
Neuroscience	10	1.76
Pharmacology, Toxicology and Pharmaceutics	8	0.9
Agricultural and Biological Sciences	7	0.8

Table 3: Top Contributing Based On Subject Area.

The subject area distribution in your figure reveals a clear, multifaceted landscape. The most prominent slice belongs to Social Sciences, Humanities, and Arts (32.6%), highlighting the solid foundation of your field in these areas. This could indicate the importance of social and cultural considerations in your field or the emphasis on understanding the human experience within its context. Following closely behind are Medicine (25.1%) and Health Professions (4.1%), emphasizing the field's significant contributions to medical knowledge and potentially its practical applications in healthcare settings. Meanwhile, the presence of Business, Management, and Accounting (2.3%) suggests the relevance of economic and organizational aspects, while Psychology (16.1%) and Nursing (7.3%) point to the focus on individual and professional behavior within your field.

However, the figure also tells a story of interdisciplinary crosscurrents. The presence of smaller yet notable slices from diverse areas like Agricultural and Biological Sciences (0.8%), Pharmacology, Toxicology and Pharmaceutics (0.9%), and Neuroscience (1.1%) indicates the field's engagement with various scientific disciplines. This interdisciplinary nature is further hinted at by the "Other" category (5.1%), which could encompass many specialized areas not explicitly captured in the main categories.

Top 10 Number of Citation

Compiling the top ten citations by research in supervision and professional development presents an intriguing tapestry of impactful studies that have resonated significantly within the scholarly landscape. These citations, representing seminal works across diverse thematic areas within the domain, underscore the multifaceted nature and far-reaching impact of research in this field. The study by S. Elo, M. Kääriäinen, A. Oikarainen, A.-M. Tuomikoski, S. Ruotsalainen, M. Saarikoski, T. Kärsämänoja, and K. Mikkonen, published in Nurse Education Today in 2018, emerges as the most cited research, amassing 82 citations. Furthermore, this cross-sectional study examines healthcare students' evaluation of the clinical learning environment and supervision, offering valuable insights into the educational context's impact on professional development.
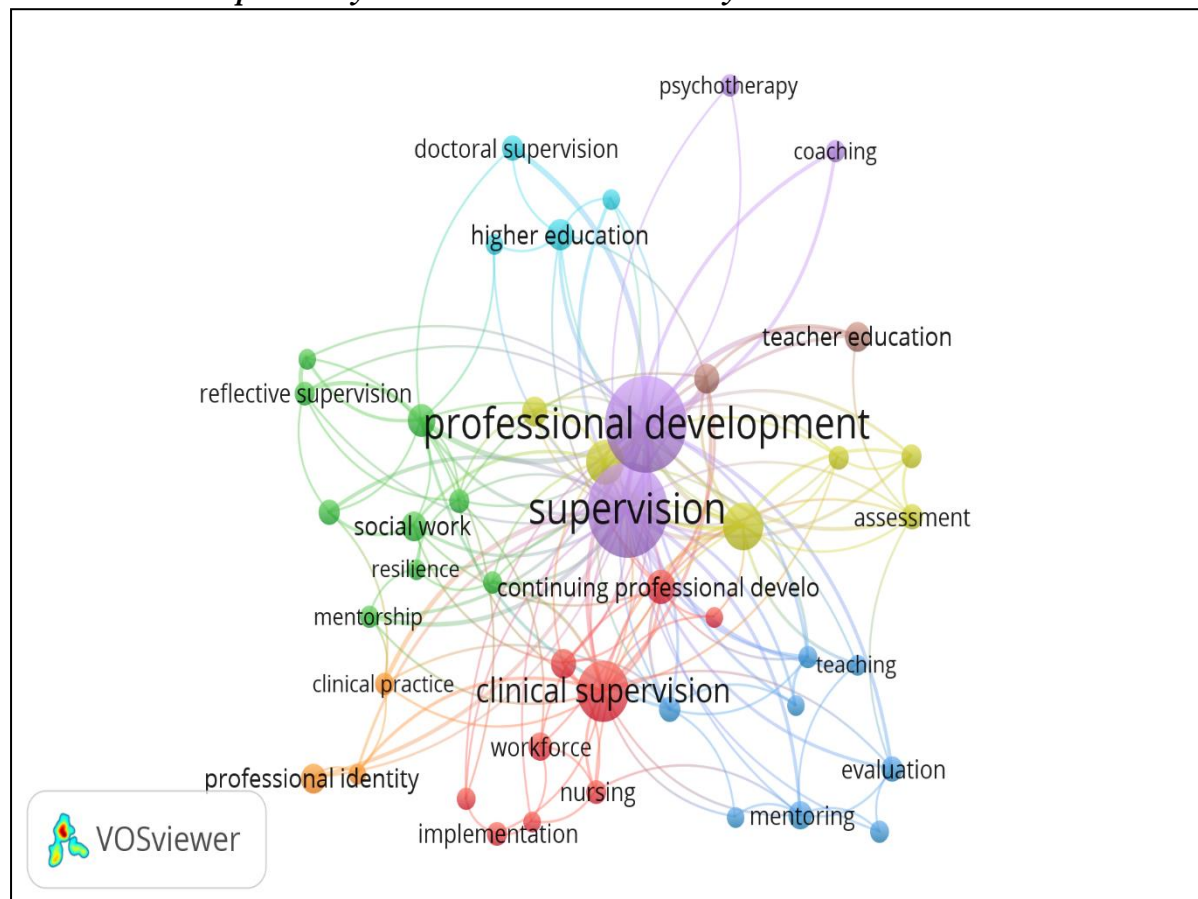
Similarly, Foster, Cuzzillo, and Furness' work in the Journal of Psychiatric and Mental Health Nursing, titled "Strengthening Mental Health Nurses' Resilience Through a Workplace Resilience Programme: A Qualitative Inquiry," stands out with 57 citations. This qualitative inquiry delves into enhancing mental health nurses' resilience, shedding light on strategies to bolster their capacity to navigate challenging work environments effectively. Moreover, Martin, Lizarondo, and Kumar's systematic review published in the Journal of Telemedicine and Telecare in 2018, investigating the factors influencing the quality and effectiveness of telesupervision for health professionals, garners 46 citations. Hence, this review consolidates diverse factors influencing telesupervision's efficacy, providing a comprehensive understanding of this emerging form of supervision.

The diverse thematic range of these highly cited studies encompasses mental health resilience, clinical learning environments, telesupervision, burnout predictors during the COVID-19 pandemic, and more. Each study contributes significantly to the discourse on supervision and professional development, highlighting the field's dynamic nature and the pivotal role these studies play in advancing knowledge and practice within various healthcare and allied fields. Moreover, this selection of top-cited research underscores the breadth and depth of scholarship

in supervision and professional development, underscoring the varied topics, methodologies, and contexts researchers explore to contribute meaningfully to this critical area of inquiry.

Authors	Title	Year	Source Title	Cited by
Pitkänen S.; Kääriäinen M.; Oikarainen A.; Tuomikoski A.-M.; Elo S.; Ruotsalainen H.; Saarikoski M.; Kärsämänoja T.; Mikkonen K.	Healthcare students' evaluation of the clinical learning environment and supervision – a cross-sectional study	2018	Nurse Education Today	82
Foster K.; Cuzzillo C.; Furness T.	Strengthening mental health nurses' resilience through a workplace resilience programme: A qualitative inquiry	2018	Journal of Psychiatric and Mental Health Nursing	57
Martin P.; Lizarondo L.; Kumar S.	A systematic review of the factors that influence the quality and effectiveness of telesupervision for health professionals	2018	Journal of Telemedicine and Telecare	46
Cotel A.; Golu F.; Stoian A.P.; Dimitriu M.; Socea B.; Cirstoveanu C.; Davitoiu A.M.; Alexe F.J.; Oprea B.	Predictors of burnout in healthcare workers during the covid-19 pandemic	2021	Healthcare (Switzerland)	40
Snowdon D.A.; Sargent M.; Williams C.M.; Maloney S.; Caspers K.; Taylor N.F.	Effective clinical supervision of allied health professionals: A mixed methods study	2019	BMC Health Services Research	39
Lemieux-Cumberlege A.; Taylor E.P.	An exploratory study on the factors affecting the mental health and well-being of frontline workers in homeless services	2019	Health and Social Care in the Community	34
Rønnestad M.H.; Orlinsky D.E.; Schröder T.A.; Skovholt T.M.; Willutzki U.	The professional development of counsellors and psychotherapists: Implications of empirical studies for supervision, training, and practice	2019	Counselling and Psychotherapy Research	33
Cleak H.; Zuchowski I.	Empirical Support and Considerations for Social Work Supervision of Students in Alternative Placement Models	2019	Clinical Social Work Journal	30

Reid S.J.; Peacocke J.; Kornik S.; Wolvaardt G.	Compulsory community service for doctors in South Africa: A 15-year review	2018	South African Medical Journal	29
Frosch C.A.; Varwani Z.; Mitchell J.; Caraccioli C.; Willoughby M.	Impact Of Reflective Supervision On Early Childhood Interventionists' Perceptions Of Self-Efficacy, Job Satisfaction, And Job Stress	2018	Infant Mental Health Journal	29

Table 4: Top Contributing Publications.

What Are The Popular Keywords Related To The Study?

Figure 4: Network Visualization Map Of Keywords' Co-Occurrence

At the heart of the map lies a cluster of prominent keywords acting as foundational pillars of your field. These terms, likely appearing frequently in your analyzed documents, represent the core concepts and theoretical frameworks that shape research within this domain. Therefore, identifying and interpreting these central keywords is crucial, as they offer a window into the field's dominant paradigms and areas of intense investigation. Surrounding these core concepts

are clusters of related keywords, forming constellations of knowledge around specific themes or subfields. Hence, analyzing the proximity and connections between these clusters can reveal interesting insights. Are there closely linked subfields sharing common ground? Are there emerging themes gaining traction and potentially shaping the future direction of the field? By tracing the connections between keywords, you can illuminate the intellectual discourse within your field and identify potential areas for further research or collaboration.

Furthermore, the size and color of the nodes in the map offer additional clues. Larger nodes represent keywords with higher co-occurrence frequency, hinting at their relative prominence within the field. Similarly, the color gradient can indicate the thematic clusters to which each keyword belongs. Thus, this visual dimension allows you to quickly grasp the overall structure of the knowledge landscape and identify key areas for deeper exploration.

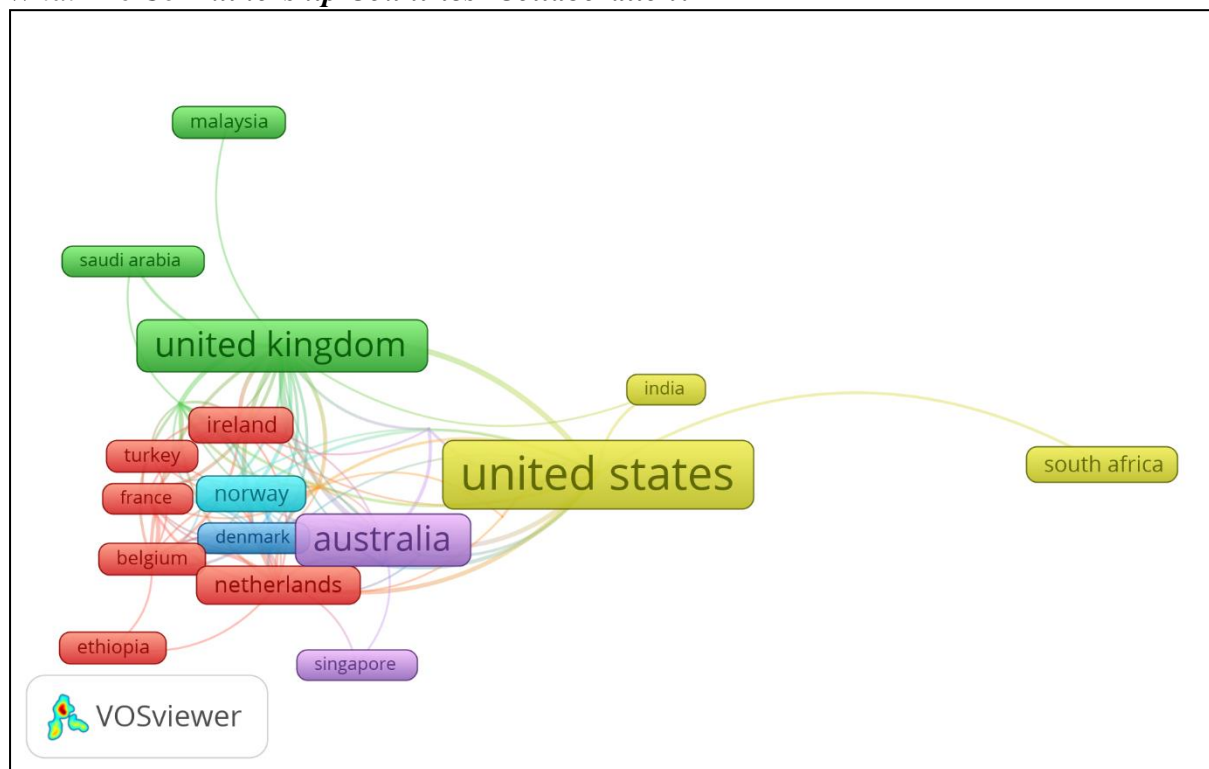*What Are Co-Authorship Countries' Collaboration?*

Figure 5: Co-Authorship Countries' Collaboration.

Figure 5 displays the countries whose authors collaborate on supervision and professional development. The map reveals a central cluster dominated by the United States (US), solidifying its position as a leading research activity and collaboration hub within your field. Surrounding this core, we observe clusters representing other significant players like China, the United Kingdom (UK), Germany, and Australia. Therefore, analyzing the connections between these clusters highlights the intricate web of international partnerships shaping your field. Moreover, the thick lines linking the US with China and the UK, for instance, suggest strong collaborative ties driven by shared research interests or funding initiatives.

Beyond the established clusters, smaller groups and individual nodes point to emerging collaborations and potential future trends. The cluster formed by India, Singapore, and

Malaysia indicates growing research activity in Southeast Asia. At the same time, the connection between South Africa and Brazil hints at promising collaborations in the Global South. Hence, analyzing the thematic keywords associated with these emerging clusters can reveal the specific research areas driving these partnerships and their potential impact on the field's future trajectory.

The color gradient in the map also offers valuable insights into regional dynamics and knowledge flows. The dominance of blue nodes in Europe and North America suggests a well-established network of collaboration within these regions. However, the presence of green nodes in Asia and Africa highlights the increasing participation of these regions in global research endeavors. Therefore, this shift might indicate a diversification of knowledge production and potential challenges to traditional power structures within your field.

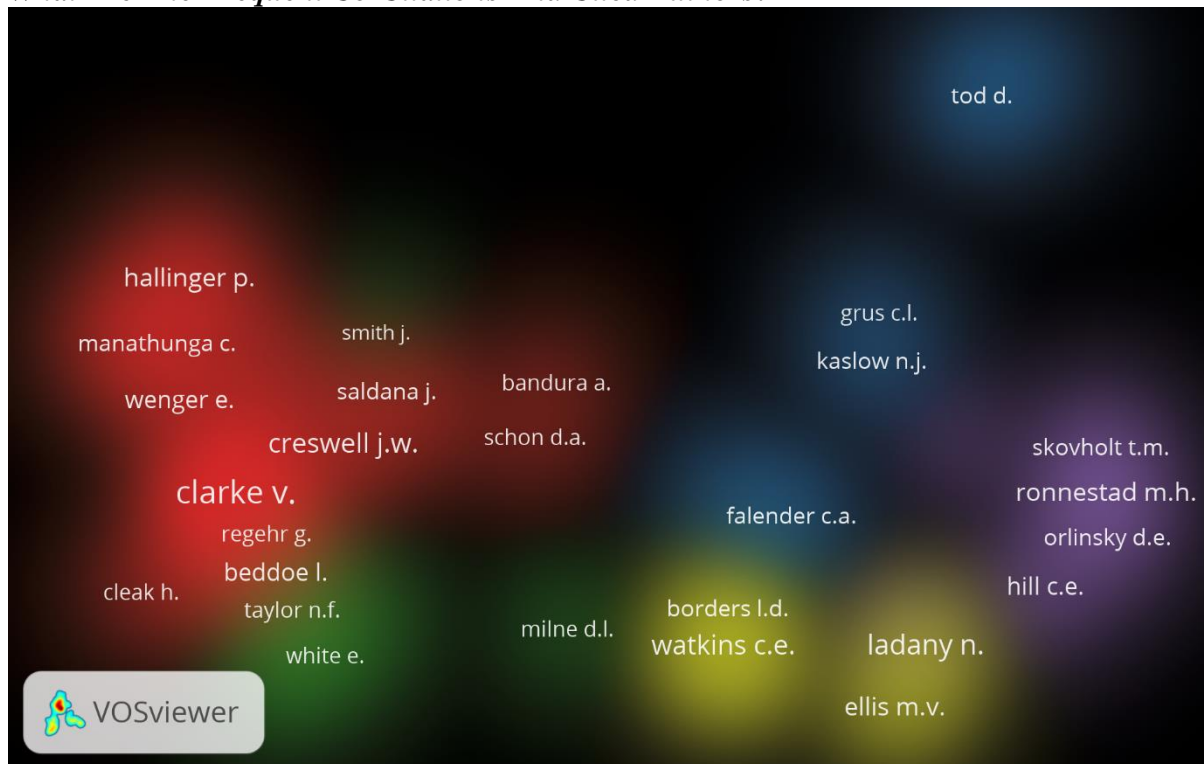***What Are The Frequent Co-Citations And Cited Authors?***

Figure 6: Co-Citation And Cited Author Analysis.

The central cluster of large nodes represents the foundational pillars of the field – the most frequently cited authors whose work shapes its core theoretical frameworks and research agendas. Identifying these authors and their key publications is crucial, as they provide a window into the field's established knowledge base and dominant paradigms.

Surrounding these core figures are smaller clusters, forming constellations of knowledge around specific themes or subfields. Analyzing the proximity and connections between these clusters reveals fascinating insights. Are there closely linked subfields sharing foundational authors? Are there emerging clusters with unique constellations hinting at potential future directions for the field? Therefore, by tracing the connections between cited authors and their

thematic areas, you can illuminate the intellectual discourse within your field and identify potential areas for further research or collaboration.

The size and color of the nodes offer additional clues. Larger nodes represent authors with higher co-citation frequency, highlighting their relative influence within the field. Similarly, the color gradient might indicate clusters based on thematic areas or methodologies. Moreover, this visual dimension allows you to quickly grasp the overall structure of the knowledge landscape and identify key authors and thematic areas for deeper exploration. Furthermore, the lines connecting nodes reveal patterns of influence and knowledge flow. Thick lines indicate frequent co-citation between authors, suggesting a strong intellectual connection and shared theoretical ground. Thus, tracing these lines can help you map the flow of knowledge within your field, identifying how seminal works have shaped subsequent research and how authors build upon each other's contributions.

Discussion and Conclusion

The presented findings from the Scopus Analyzer paint a vivid picture of a dynamically evolving field focused on supervision and professional development. The steady increase in the number of publications from 2018 to 2023 indicates a growing interest and momentum within this domain. Several factors contribute to this upward trajectory, such as increased research funding, heightened recognition of the field's significance, and advancements in methodologies and theoretical frameworks. Note that the steeper rise in publications around 2020 demands specific attention, signalling potential unique events or trends. Hence, delving into the context surrounding this surge offers valuable insights into the field's dynamics and areas of intense activity. The bibliometric analysis unveils a spectrum of prolific authors contributing significantly to the discourse. In addition, the top ten authors, led by G. Ingham, represent a diverse and interconnected tapestry of research within supervision and professional development. Note that the quantitative assessment highlights prolific output. Meanwhile, further qualitative examination of their works is essential to understanding specific themes, methodologies, and theoretical frameworks shaping the discourse.

The interdisciplinary nature of the field is evident from the diverse thematic areas, with a substantial focus on Social Sciences, Humanities, Arts, and Medicine. This multidisciplinary engagement underscores the field's dynamism and relevance across various scientific disciplines. The top ten citations reveal impactful studies resonating within the scholarly landscape, covering diverse themes such as mental health resilience, clinical learning environments, telesupervision, and predictors of burnout during the COVID-19 pandemic. Furthermore, the geographical distribution of research activity indicates a central cluster dominated by the US, highlighting its leading role in research and collaboration within the field. Therefore, emerging clusters and connections, particularly in Southeast Asia and the Global South, suggest promising collaborations and potential future trends.

In conclusion, the bibliometric analysis provides a comprehensive overview of supervision and professional development. The steady increase in publications signals a growing interest, while the surge around 2020 requires further investigation into specific events or trends. In addition, the top authors and citations highlight the richness and diversity of research within the field, emphasizing the need for both quantitative and qualitative assessments to understand the nuances of scholarly contributions. The interdisciplinary nature of the field, as evident from thematic distributions, underscores its broad impact across various scientific disciplines.

Meanwhile, geographical patterns highlight established and emerging research hubs, with the US playing a central role in the global landscape. At the same time, these insights into the evolving supervision and professional development landscape offer valuable guidance for researchers, practitioners, and policymakers. Therefore, understanding the dynamics, influential figures, and thematic clusters within the field enables informed decision-making and fosters collaborative efforts for future advancements.

Acknowledgement

References

Aghaei Chadegani, A., Salehi, H., Md Yunus, M. M., Farhadi, H., Fooladi, M., Farhadi, M., & Ale Ebrahim, N. (2013). A comparison between two main academic literature collections: Web of science and scopus databases. *Asian Social Science*. https://doi.org/10.5539/ass.v9n5p18

Allahverdiyev, M., & Yucesoy, Y. (2017). Development stages and types of glass art from past to present. *Ponte*. https://doi.org/10.21506/j.ponte.2017.4.53

Alves, J. L., Borges, I. B., & De Nadae, J. (2021). Sustainability in complex projects of civil construction: Bibliometric and bibliographic review. *Gestao e Producao*. https://doi.org/10.1590/1806-9649-2020v28e5389

Antonio, P. (2019). Teacher supervision support and its impact on professional development of teachers in primary schools. *International Journal of Innovative Science and Research Technology*.

Appio, F. P., Cesaroni, F., & Di Minin, A. (2014). Visualizing the structure and bridges of the intellectual property management and strategy literature: a document co-citation analysis. *Scientometrics*. https://doi.org/10.1007/s11192-014-1329-0

Appio, F. P., Martini, A., Massa, S., & Testa, S. (2016). Unveiling the intellectual origins of Social Media-based innovation: insights from a bibliometric approach. *Scientometrics*. https://doi.org/10.1007/s11192-016-1955-9

Assyakur, D. S., & Rosa, E. M. (2022). Spiritual Leadership in Healthcare: A Bibliometric Analysis. *Jurnal Aisyah : Jurnal Ilmu Kesehatan*. https://doi.org/10.30604/jika.v7i2.914

Coleman, G., & Hyde, E. (2022). Is there a role for professional supervision in supporting the professional and personal wellbeing of the sonographic workforce? A literature review. In *Radiography*. https://doi.org/10.1016/j.radi.2022.07.008

da Silva Pinheiro, G. M., de Carvalho Macedo, A. P. M., & da Costa, N. M. V. N. (2014). Collaborative supervision and professional development in Nursing. *Revista de Enfermagem Referencia*, *4*(2). https://doi.org/10.12707/RIII1381

di Stefano, G., Peteraf, M., & Veronay, G. (2010). Dynamic capabilities deconstructed: A bibliographic investigation into the origins, development, and future directions of the research domain. *Industrial and Corporate Change*. https://doi.org/10.1093/icc/dtq027

Ducat, W., Martin, P., Kumar, S., Burge, V., & Abernathy, L. (2016). Oceans apart, yet connected: Findings from a qualitative study on professional supervision in rural and remote allied health services. *Australian Journal of Rural Health*, *24*(1). https://doi.org/10.1111/ajr.12192

Fahimnia, B., Sarkis, J., & Davarzani, H. (2015). Green supply chain management: A review and bibliometric analysis. In *International Journal of Production Economics*. https://doi.org/10.1016/j.ijpe.2015.01.003

Glanz, Jeffrey; Shulman, Vivian; Sullivan, S., Glanz, J., Shulman, V., & Sullivan, S. (2007). Impact of Instructional Supervision on Student Achievement: Can We Make the Connection? *Annual Conference of the American Educational Research Association (AERA)*.

Huet, I., & Casanova, D. (2022). Exploring the professional development of doctoral supervisors through workplace learning: a literature review. *Higher Education Research and Development*. https://doi.org/10.1080/07294360.2021.1877629

Li, H., An, H., Wang, Y., Huang, J., & Gao, X. (2016). Evolutionary features of academic articles co-keyword network and keywords co-occurrence network: Based on two-mode affiliation network. *Physica A: Statistical Mechanics and Its Applications*. https://doi.org/10.1016/j.physa.2016.01.017

Liu, Z., Yin, Y., Liu, W., & Dunford, M. (2015). Visualizing the intellectual structure and evolution of innovation systems research: a bibliometric analysis. *Scientometrics*. https://doi.org/10.1007/s11192-014-1517-y

Martin, P., Lizarondo, L., Kumar, S., & Snowdon, D. (2021). Impact of clinical supervision on healthcare organisational outcomes: A mixed methods systematic review. In *PLoS ONE*. https://doi.org/10.1371/journal.pone.0260156

Meier, M. (2011). Knowledge Management in Strategic Alliances: A Review of Empirical Evidence. In *International Journal of Management Reviews*. https://doi.org/10.1111/j.1468-2370.2010.00287.x

Nasution, A. A., Muda, I., Ulfah, Y., Erlina, E., & Nedelea, A. M. (2022). THE EFFECT OF LABOR INPUT, CONSTRUCTION COST, AND BUILDING PERMITS ON PRODUCTION CONSTRUCTION WITH STRUCTURAL EQUATION MODELING, EVIDENCE FROM EUROPE. *International Journal of Professional Business Review*. https://doi.org/10.26668/businessreview/2022.v7i3.0592

Nordin, M. N., Hamdan, I. F., Noor, F. M., Ali, S., Magiman, M. M., Yusof, N. M., & Tajuddin, N. I. I. (2023). THE IMPLEMENTATIONS OF TECHNOLOGY IN SPECIAL EDUCATION CLASSROOMS BASED PROJECT. *International Journal of Professional Business Review*. https://doi.org/10.26668/businessreview/2023.v8i5.1444

Olijnyk, N. V. (2015). An algorithmic historiography of the Ebola research specialty: mapping the science behind Ebola. *Scientometrics*. https://doi.org/10.1007/s11192-015-1688-1

Rankine, M. (2021). Supervision and professional development in social work practice. *Aotearoa New Zealand Social Work*, *33*(1). https://doi.org/10.11157/anzswj-vol33iss1id832

Severinsson, E., & Sand, Å. (2010). Evaluation of the clinical supervision and professional development of student nurses. *Journal of Nursing Management*, *18*(6). https://doi.org/10.1111/j.1365-2834.2010.01146.x

Tan, J., Fu, H. Z., & Ho, Y. S. (2014). A bibliometric analysis of research on proteomics in Science Citation Index Expanded. *Scientometrics*. https://doi.org/10.1007/s11192-013-1125-2

Tesfaw, T. A., & Hofman, R. H. (2012). Instructional Supervision and Its Relationship with Professional Development: Perception of Private and Government Secondary School Teachers in Addis Ababa. *Online Submission*.

Tesfaw, T. A., & Hofman, R. H. (2014). Relationship between instructional supervision and professional development. *International Education Journal*, *13*(1).

Valmas, M. M., Himrich, S. J., & Finn, K. M. (2020). Women's experiences of supervision and professional development. *Journal of Psychotherapy Integration*, *30*(1). https://doi.org/10.1037/int0000182

van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*. https://doi.org/10.1007/s11192-009-0146-3

Van Eck, N. J., & Waltman, L. (2007). Bibliometric mapping of the computational intelligence field. *International Journal of Uncertainty, Fuzziness and Knowldege-Based Systems*. https://doi.org/10.1142/S0218488507004911

Verbeek, A., Debackere, K., Luwel, M., & Zimmermann, E. (2002). Measuring progress and evolution in science and technology - I: The multiple uses of bibliometric indicators. *International Journal of Management Reviews*. https://doi.org/10.1111/1468-2370.00083

Wiyono, B. B., Widayati, S. P., Imron, A., Bustami, A. L., & Dayati, U. (2022). Implementation of Group and Individual Supervision Techniques, and Its Effect on the Work Motivation and Performance of Teachers at School Organization. *Frontiers in Psychology*. https://doi.org/10.3389/fpsyg.2022.943838

Wu, Y. C. J., & Wu, T. (2017). A decade of entrepreneurship education in the Asia Pacific for future directions in theory and practice. In *Management Decision*. https://doi.org/10.1108/MD-05-2017-0518

Zhao, X. (2017). A scientometric review of global BIM research: Analysis and visualization. In *Automation in Construction*. https://doi.org/10.1016/j.autcon.2017.04.002