Bibliometric Analysis of Studies On Teacher Resilience

Nurtaç ÜSTÜNDAĞ-KOCAKUŞAK

Aydın Adnan Menderes University

nurtac.ustundag@adu.edu.tr

ORCID: 0000-0002-2014-6571

(Corresponding author)

Ruken AKAR-VURAL

Aydın Adnan Menderes University

rakarvural@gmail.com

ORCID: 0000-0002-3137-3753

Abstract

This study aimed to reveal general landscape of research on teacher resilience, employing descriptive and bibliometric analyses. Descriptive analyses were performed utilizing Web of Science's internal system, while bibliometric analyses were executed through the VOSviewer program. Web of Science Core Collection was used as a data source. Citation analyses of publications, authors, and journals, as well as co-authorship, co-citation, and common word analyses were conducted. The research reveals a timeline of publications, indicating a notable surge in 2006, and a substantial increase in 2021. The countries with the highest number of publications on teacher resilience, in descending order, are the United States of America (USA), Australia, the United Kingdom (UK), and the People's Republic of China (PRC), according to the research findings. Authors such as Gu, C. Day, S. Beltman, C. Mansfield, and A. Price emerged from the citation analysis. Based on the results from the co-citation analysis, C. Day and Q. Gu were identified as the most frequently co-cited authors. The co-occurrence analysis of keywords highlighted key terms like resilience, teacher education, early career teachers, teacher candidates, professional learning, school leadership, and Covid-19. The findings were contextualized within the existing literature, leading to recommendations for future research.

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Keywords: *Bibliometric, Citation analysis, Co-word analysis, Teacher resilience*

Introduction

In numerous countries, teacher training programs often fall short as they primarily emphasize enhancing pedagogical competencies, neglecting the crucial emotional and social skills required by teachers. Teachers possessing advanced professional skills may face burnout due to an inability to effectively cope with the emotional stresses inherent in the profession (Wang, 2021). However, understanding and supporting resilience are essential, not only for teachers but for all stakeholders in educational environments, to enhance the quality of life and learning processes (Schwarze & Wosnitza, 2018). Resilience is defined as an individual's ability to adapt successfully in the face of challenging or threatening conditions (Masten et al., 1990).

Teacher resilience is characterized as the ability to effectively cope with and adapt to challenging situations, as well as to cultivate social, academic, and professional competencies in the face of stressful conditions or daily life stress (Henderson & Milstein, 2003). According to Day and Gu (2014), teacher resilience goes beyond mere coping; it involves possessing essential qualities, such as a deep commitment to the profession, professional self-efficacy, and motivation. In this context, teacher resilience is defined as the ability to maintain a balance between personal life and work responsibilities, while sustaining a sense of commitment and purposeful action (Gu & Day, 2013). Teachers' elevated resilience levels not only benefit their own well-being but also serve as a protective factor for fostering positive social relationships within the school community (Gu, 2017). The impact of teachers' resilience traits on their daily lives has gained significant importance, offering valuable insights for enhancing teaching practices and ultimately improving student achievements (Day & Hong, 2016). In this context, the current study is anticipated to make a meaningful contribution to the existing literature by shedding light on the overall landscape of research on teacher resilience published in internationally indexed journals. The overarching goal of this research is to uncover the prevailing situation in the realm of teacher resilience research, offering valuable insights into the emerging research trends. The study aims to broaden the perspectives of researchers, offering a deeper understanding of the complexities of teacher resilience and its various dimensions.

Method

In this study, the research on "teacher resilience" was scrutinized using descriptive and bibliometric analysis techniques. Bibliometric analysis, also referred to as scientific mapping, is a method wherein scientific studies are analyzed using visual maps, and networks of co-authorship and citation are established (Zupic & Čater, 2015). Similar to other systematic review methods, scientific mapping outlines the procedures used in data analysis and the identification of studies (Hallinger et al., 2020).

Procedure

In the research, data sourced from the Web of Science were analyzed due to the validity of its contents at both national and international levels. The inclusion criteria for the studies encompassed their relevance to teacher resilience, their format as articles or reviews, and the accessibility of the full text. Accordingly, the Web of Science Core Collection served as the primary data source, with searches conducted on the Social Science Citation Index (SSCI), Emerging Sources Citation Index (ESCI), Science Citation Index Expanded (SCI-Expanded), and Arts & Humanities Citation Index (A&HCI) indexes. The search and data recording procedures were concluded on May 27, 2023, adhering to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines for a systematic review of the selected studies (Moher et al., 2009). A specific keyword sequence was formulated to include school administrators while excluding studies centered on students:

Resilience OR resilient OR resiliency (All Fields) AND teacher OR leader* OR principal* OR "school admistrator*" OR "school manager*" (All Fields) NOT student* OR child* OR pupil* OR adolescen* OR learner* OR youth OR young* (Title) and Article or Review Article (Document Types) and Education Educational Research (Web of Science Categories)*

No limitations were set for publication year, country, or language during the search process. No duplications were identified, ensuring the inclusion of unique studies in the analysis. The PRISMA diagram illustrating the selection process for the 641 articles from a total of 250 journals is presented in Figure 1.

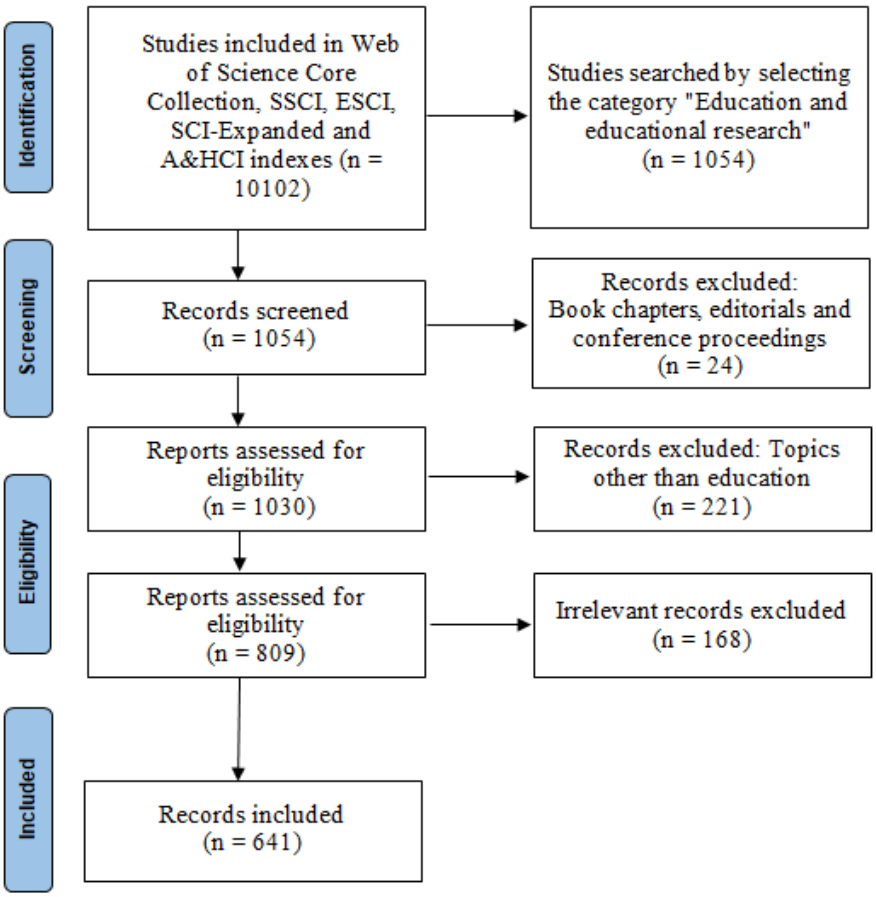

Figure 1. PRISMA Flow Diagram for Identification of Studies

Data Analysis

The analysis of the data in this study employed both descriptive and bibliometric analysis methods. Descriptive analyses were carried out within the Web of Science's own system. For bibliometric analyses, the VOSviewer program (Perianes-Rodriguez et al., 2016) was utilized. VOSviewer is a software designed for visualizing relationships within data extracted from databases like Web of Science and Scopus. In this study, citation analysis was applied to publications, authors, and journals. Co-authorship analysis was conducted for authors and countries, while co-citation analysis was employed for authors. Additionally, co-word analysis was implemented to explore thematic relationships within the studies.

Citation analysis involves calculating the frequency with which a publication, author, journal, or institution is cited by other works within the relevant index (Hallinger et al., 2020). Co-

citation analysis, determines how often references are cited together in analyzed publications, assuming that the more frequently two items are cited together, the more likely their content is related (Zupic & Čater, 2015). Co-author analysis explores collaborations between researchers on scientific articles (Acedo et al., 2006). Co-word analysis examines the co-occurrence of keywords within the titles, keywords, and abstracts of reviewed documents (Hallinger et al., 2020). There is no standardized threshold setting for co-citation or co-word analysis (van Eck & Waltman, 2014). Researchers have the flexibility to adjust the threshold value, broadening or narrowing the scope based on their research objectives.

Thesaurus files were created for each required analysis to facilitate data cleaning before initiating the analysis process. This meticulous preparation ensures the accuracy and reliability of the findings. In the co-authorship, citation, and co-citation analyses, author names written in various formats (e.g., "Mansfield, Caroline," "Mansfield Caroline F.," and "Mans. F. Caroline") and words with similar meanings or different spellings in the co-word analysis (e.g., "teachers" and "teacher," "wellbeing" and "well-being," "covid-19" and "covid-19 pandemic") were standardized and combined. However, in the common keyword analysis, only spelling differences among similar keywords were addressed, without any further intervention. No data cleaning was necessary for journal citation analysis and co-authorship analysis of countries.

Findings

Descriptive Findings

Distribution of Publications by Years, Countries and Journals

The descriptive characteristics of the studies included in the analysis, such as their distribution by years, countries, and journals, were examined in the analysis reports within Web of Science's own system. The distribution of publications by years is illustrated in Figure 2, providing a visual representation of the research output over time.

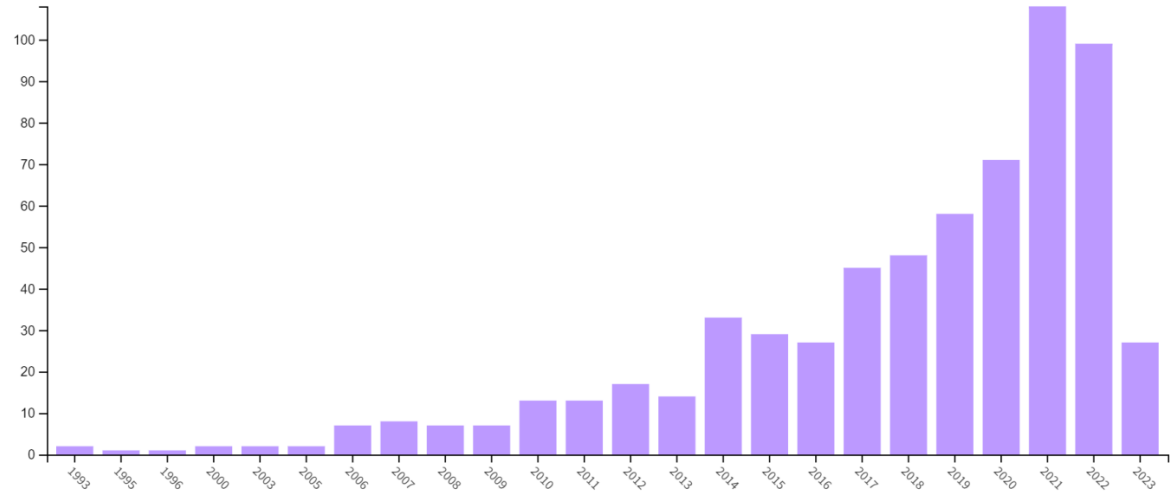

Figure 2. Distribution of Publications by Years

Upon examining Figure 2, it is evident that studies on teacher resilience have been conducted since 1993 and onward. Following a modest increase after 2006, a substantial rise in research output occurred in 2021, marking a significant surge in studies on this topic. The distribution of publications according to countries is visualized in Figure 3, offering insights into the geographic spread of research contributions on teacher resilience.

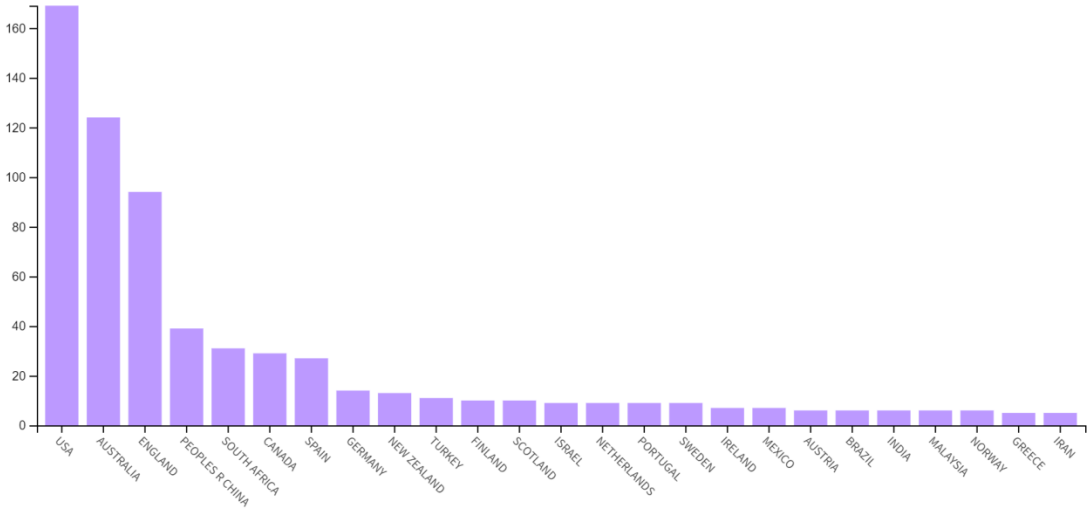

Figure 3. Distribution of Publications by Country

As illustrated in Figure 3, the USA leads in the number of publications on the subject of teacher resilience. Following closely are Australia, the UK, and the PRC. Figure 4 displays the distribution of journals where the analyzed articles were published.

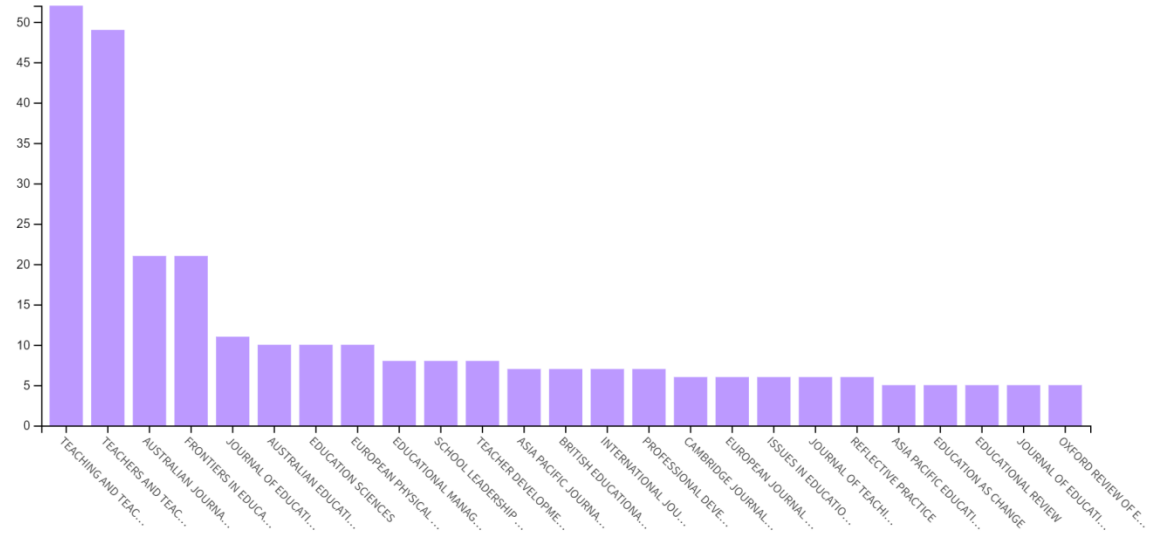

Figure 4. Distribution of Publications by Journals

Figure 4 reveals that the journals with the highest number of publications on the subject are "Teaching and Teacher Education" and "Teachers and Teaching," respectively. While the "Australian Journal of Teacher Education" and "Frontiers in Education" have an equal number of publications, the number of publications in these two journals is less than half compared to the top two journals. Other journals show relatively fewer studies in comparison, indicating a concentration of research output in specific publications.

Bibliometric Findings

Findings on Citation Analysis of Publications, Authors and Journals

In the citation analysis conducted for the publications examined in this research, it was found that out of 641 articles analyzed on teacher resilience, 43 articles received 50 or more citations. The citation rankings of the 10 most cited articles are presented in Table 1.

Table 1. Citation Numbers of the Publications

Publication	Number of Citations	Link
Gu & Day (2007)	380	43
Beltman et al., (2011)	286	29
MacIntyre et al., (2020)	255	0
Day & Gu (2007)	229	11
Crocco & Costigan (2007)	196	1
Mansfield et al., (2016)	190	40
Hong (2012)	188	25
Gu & Day (2013)	173	21
Mansfield et al., (2012)	151	28
Castro et al., (2010)	149	19

In Table 1, it is evident that 4 out of the 10 most cited publications were published in the journal "Teaching and Teacher Education". The second most cited article is a review. Regarding authors, the citation analysis identified 1469 authors who have published on teacher resilience. Among these authors, 36 have at least one publication with 100 or more citations. The citation rankings of the top 20 authors are provided in Table 2.

Table 2. Citation Numbers of the Publications' Authors

Author	Number of Publications	Number of Citations	Link Strength
Day, Christopher	9	1267	152
Gu, Qing	7	990	161
Mansfield, Caroline	9	817	204

Beltman, Susan	9	760	208
Price, Anne	4	542	117
Le Cornu, Rosie	5	350	81
Richards, K. Andrew R.	17	300	195
Mercer, Sarah	4	264	22
Gregersen, Tammy	2	263	3
Macintyre, Peter D.	2	263	3
Pearce, Jane	3	225	45
Broadley, Tania	2	199	67
Costigan, Arthur I.	1	196	0
Crocco, Margaret S.	1	196	0
Weatherby-Fell, Noelene	1	190	60
Hong, Ji Y.	1	188	23
McConney, Andrew	2	171	47
Castro, Antonio J.	1	149	26
Kelly, John	1	149	26
Shih, Minyi	1	149	26

Table 2 highlights that the most cited author in the field of teacher resilience is C. Day, closely followed by Q. Gu. These two authors have collaborated on numerous publications, which is reflected in their high citation counts. Additionally, C. Mansfield, S. Beltman, and A. Price are other authors with a substantial number of citations, and they also have collaborative publications on the subject. Furthermore, the link strength of C. Mansfield and S. Beltman with other studies appears to be notably high compared to other authors, indicating strong

connections and co-citation patterns in their work. While some authors have citation numbers at an average level, it's observed that their link strength is comparatively low. This might indicate a lower level of relationship and co-citation influence with other authors.

In the citation analysis conducted on journals, it was found that there are 250 journals with publications on teacher resilience. Among these journals, a cut-off point of having at least one publication and at least 20 citations was used. Based on these criteria, 53 journals met the threshold. The citation rankings of the top 20 journals with the highest number of citations are presented in Table 3, showcasing the impact and influence of these journals within the field of teacher resilience.

Table 3. Citation Numbers of the Journals in which the Publications Are Included

Journal	**Number of Publications**	**Number of Citations**	**Link Strength**
Teaching and Teacher Education	52	2089	442
Teachers and Teaching	49	1246	332
Urban Education	5	393	30
Australian Journal of Teacher Education	21	369	95
System	5	338	27
Educational Research Review	1	286	67
British Educational Research Journal	7	285	79
Oxford Review of Education	5	251	31
Journal of Education for Teaching	11	193	39
Journal of Educational Change	5	190	30

Asia-Pacific Journal of Teacher Education	7	163	60
Education and Infirmation Technologies	3	142	1
Padagogy Culture and Society	4	137	12
Journal of Tecaher Educatiom	3	119	2
Issues in Educational Research	6	110	37
Frontiers in Education	21	105	44
Australian Educational Researcher	10	104	86
Australian Journal of Education	2	101	25
European Physical Education Review	10	97	54
Educational Administration Quarterly	2	97	1

In Table 3, it is evident that the journal with the highest number of publications and citations is "Teaching and Teacher Education". Following closely is "Teachers and Teaching". These journals not only have a significant volume of publications but also exhibit strong co-citation patterns with other journals, indicating their substantial influence and interconnectedness within the field. Interestingly, journals such as "Urban Education", "System", and "Educational Research Review", while relatively lower in the number of publications, have garnered a high number of citations, surpassing many other journals. This suggests that the content published in these journals has had a substantial impact within the academic community despite their lower publication volume.

Findings on Co-Authorship of Authors Analysis

In the co-author analysis, a total of 1454 authors with at least one publication were identified. Applying a threshold of at least one publication and at least one citation, 1141 authors were included in the analysis. Figure 5 illustrates the co-author analysis based on collaborations between these authors, providing a visual representation of their collaborative networks and partnerships within the field of teacher resilience.

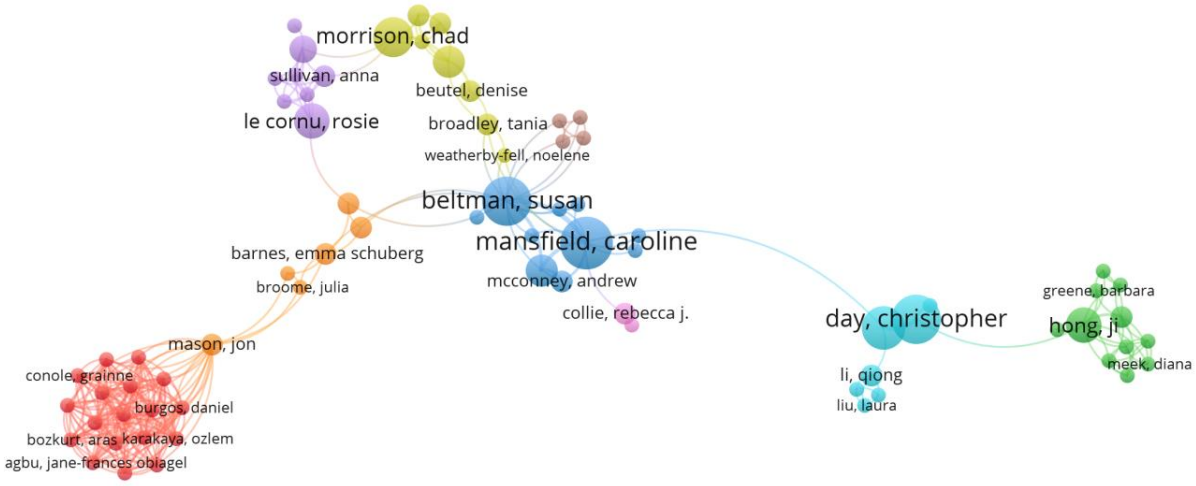

Figure 5. Collaboration Network Between Authors

In Figure 5, the inter-author collaboration map reveals nine distinct clusters comprising a total of 74 elements. While it's evident that collaboration between these clusters is not highly intense, several noteworthy patterns emerge: The red cluster, with the most extensive network consisting of 18 items, is connected to the relatively smaller orange cluster comprising six items. This indicates a bridge between these clusters, facilitating collaboration between them. The blue cluster, the most dense and centralized cluster with ten items, includes highly cited authors such as C. Mansfield and S. Beltman, suggesting a strong collaborative network among influential researchers. The turquoise cluster, with seven items, includes authors like C. Day and Q. Gu, both with high citation numbers. The 11-item green cluster shows collaboration networks primarily with the turquoise cluster. The light green and purple clusters, each with eight items, have relatively smaller collaboration networks, indicating moderate collaborative activities within these clusters. The brown cluster (four items) and lilac cluster (three items) display very limited collaboration networks, suggesting minimal partnerships among the

researchers in these clusters. The relatively sparse networks in the co-authorship analysis can be attributed to researchers working in diverse fields.

Findings on Co-Authorship Analysis (Co-Authorship of Countries)

In the co-authorship analysis of countries, a total of 71 countries with at least one publication were identified. When focusing on countries with three or more publications, a total of 42 countries were included in the analysis. The findings regarding the cooperation between these countries are illustrated in Figure 6, providing insights into the collaborative relationships and partnerships among countries in the field of teacher resilience research.

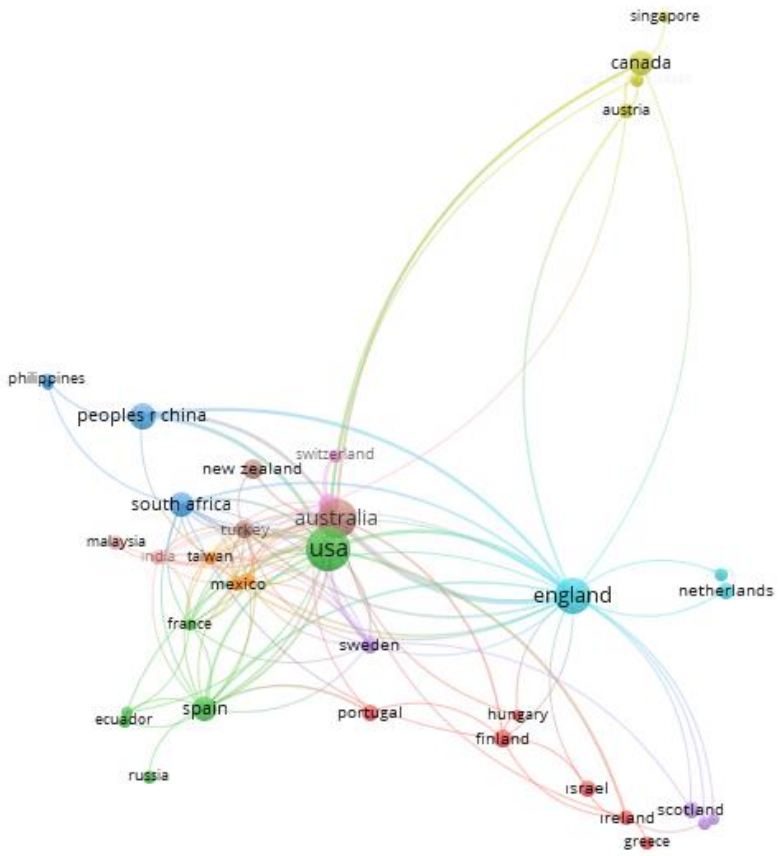

Figure 6. Cross-Country Cooperation Network

Figure 6 reveals a complex landscape of inter-country cooperation with 10 clusters and 134 connections in the map. Green Cluster, which is the most dense cluster, features the USA as the country with the most extensive collaborations, both within its cluster and with countries in other clusters. Spain collaborates significantly within its own cluster (with Russia and Ecuador) and also with countries outside its cluster, such as Turkey. Brown Cluster includes Australia,

which exhibits high connectivity, along with New Zealand and Turkey. Turkey also collaborates with countries outside its cluster, such as the United Kingdom (UK), Spain, Taiwan, France, and South Africa. Comprising the UK, Iran, and the Netherlands, turquoise cluster demonstrates robust collaborations, especially facilitated by the UK. Involving the PRC and South Africa, along with the Philippines and Thailand, blue cluster shows cooperation networks with the USA, the UK, and Australia. Light Green cluster includes Austria, Canada, Singapore, and the United Arab Emirates, displaying relatively lower cooperation with other countries. Although red cluster is less dense, Finland stands out as the country with significant cooperation within this cluster. Clusters of smaller groups suggest specific collaborative networks within the larger context. This intricate network highlights the diverse and dynamic collaborations among countries in the field of teacher resilience research, reflecting the global nature of this academic endeavor.

Findings on Co Citation Analysis (Co Citation of Authors)

In the co-citation analysis, a total of 17,869 authors were found to be cited together in various studies. The analysis focused on 125 authors who were cited 20 or more times together, and the results are depicted in Figure 7, providing insights into the prominent co-citation patterns among these influential authors within the field of teacher resilience research.

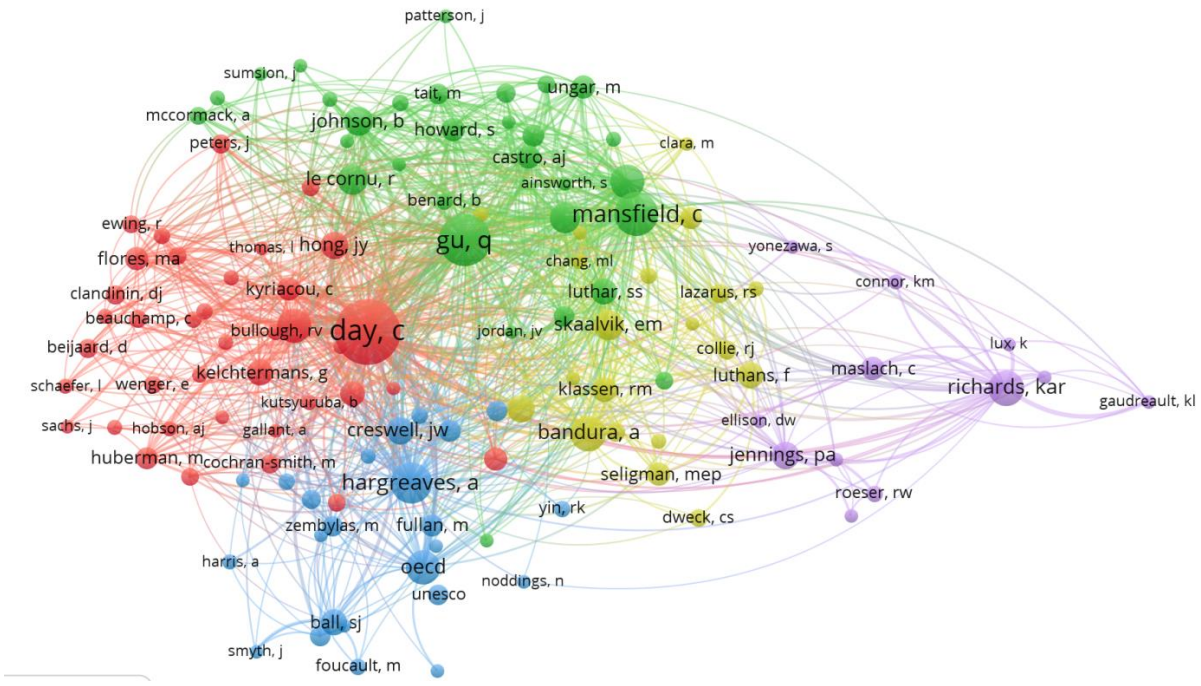

Figure 7. Common Citation Network for Authors

Figure 7 provides a detailed view of the co-citation analysis, revealing distinct clusters of influential authors in the field of teacher resilience research. Densely populated red cluster includes C. Day, the author with the highest number of co-citations. This cluster also encompasses L. Darling-Hammond, known for work on teacher effectiveness, and L. Vygotsky, a pioneer in Socio-Cultural Development Theory. Green cluster prominently features Q. Gu and C. Mansfield, authors with substantial co-citation networks. It also includes influential figures in resilience studies such as U. Bronfenbrenner, M. Ungar, E. E. Werner, M. Rutter, and A. S. Masten. Blue cluster includes A. Hargreaves, known for the studies on teachers' professional development and affective characteristics. Additionally, it comprises well-known names in qualitative research like J. W. Creswell, L. Cohen, S. B. Merriam, M. B. Miles, and R. K. Yin. Light green cluster centers around authors such as A. Bandura, a key figure in self-efficacy research, and researchers like M. Tschannen-Moran, E. M. Skaalvik, F. Luthans, and R. S. Lazarus, who have contributed significantly to teacher self-efficacy, stress, and coping studies. Focusing on studies conducted primarily with quantitative methods, purple cluster includes authors like C. Maslach and K. M. Connor, known for developing widely used data collection tools in resilience studies. These clusters highlight the diversity of research approaches and areas of focus within teacher resilience studies.

Findings Related to Co Occurrence-Author Keywords

In the co-occurrence analysis of author keywords, 1,597 repeated words were identified, showcasing the relationships and patterns between keywords used by authors in academic publications. The analysis focused on 60 words that appeared five or more times, revealing prominent themes and topics within the field of teacher resilience research. These findings are depicted in Figure 8, providing a comprehensive overview of the key concepts and areas of interest in this domain.

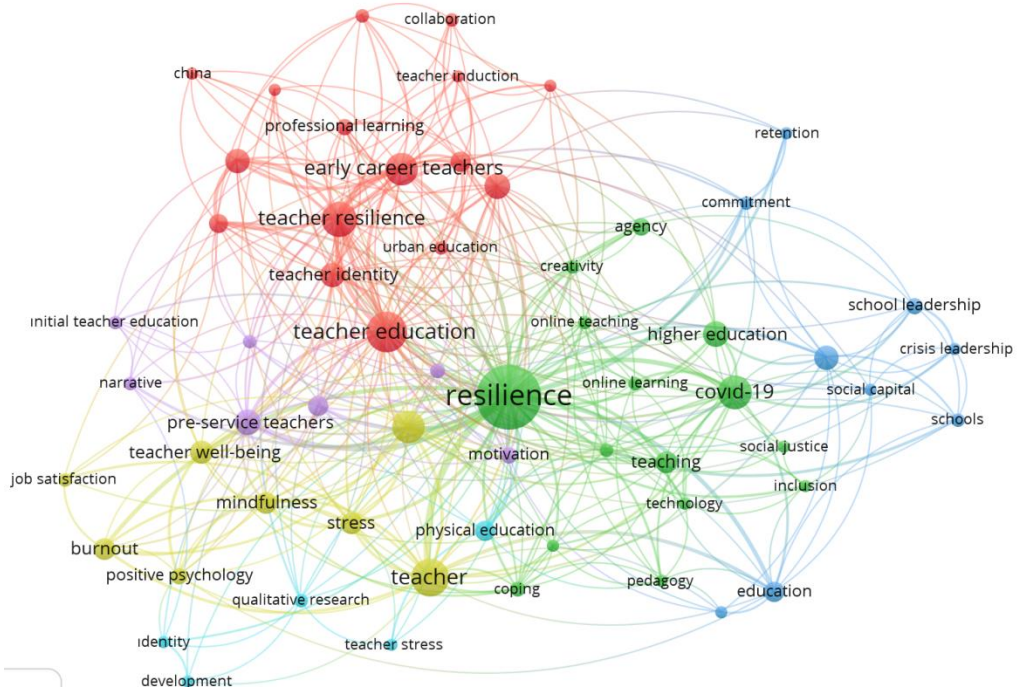

Figure 8. Co-occurrence Network of Keywords

Figure 8 provides a detailed view of the co-occurrence analysis of author keywords, revealing distinct clusters of related concepts and themes within teacher resilience research. Green Cluster is densely populated cluster and includes the word "resilience" used in conjunction with various terms from different fields. Terms related to the "COVID-19 pandemic", "technology", "online learning", and "online teaching" are grouped together, indicating an increased focus on these topics during the pandemic. Red cluster centers around the term "teacher resilience" and is associated with concepts such as "teacher education", "beginning teachers", "professional development of teachers", "teaching profession", and "professional learning". These keywords suggest a focus on the early years of teachers' careers and their professional development. Yellow cluster encompasses the words "teacher" and "well-being" and is linked with terms like "burnout", "job satisfaction", "positive psychology", "stress", and "mindfulness". The cluster suggests a focus on the affective characteristics of teachers. Blue cluster includes terms related to "leadership", "school leadership", "crisis leadership", "commitment", and "social capital". These keywords imply that studies within this cluster primarily involve school administrators and leadership roles in educational settings. Purple cluster features words such as "self-efficacy", "motivation", "teacher education", and "pre-service teachers". Turquoise cluster which is a smaller one includes terms like "physical education", "development", "identity",

"stress in teachers", and "qualitative research". This cluster may represent qualitative research specifically conducted with physical education teachers.

Discussion

In this study, an examination of "teacher resilience" within the Web of Science Core Collection was conducted using descriptive and bibliometric analysis methods. The research revealed that studies on teacher resilience were first published in 1993, with a slight increase noted in 2006 and a substantial surge in 2021. Although the exploration of resilience as a concept has a longer history, the specific focus on teacher resilience has gained significant prominence over the last decade (Hascher et al., 2021). Notably, there has been a substantial rise in studies dedicated to this topic, particularly within the past 15 years (Mansfield, 2021). The research findings indicate that the countries with the highest number of publications on teacher resilience include the USA, Australia, the UK, and the PRC. The most influential journals in this area are "Teaching and Teacher Education" and "Teachers and Teaching". This trend aligns with a review study from 2011, which highlighted the dominance of research conducted by the USA, Australia, and the UK in shaping the knowledge base on teacher resilience (Beltman et al., 2011).

The study's findings revealed that the most frequently cited publications were authored by Q. Gu and C. Day, as well as S. Beltman, C. Mansfield, and A. Price, respectively. The study also identified these authors as the most cited ones in the field. The findings from the journal citation analysis were consistent with the popularity of these journals. Additionally, the research's co-authorship analysis revealed that C. Mansfield and S. Beltman were the leading pairs, followed by C. Day and Q. Gu, respectively. The outcomes of the cross-country collaboration analysis indicated that the USA and Australia, the countries where these authors are based, are at the forefront of international collaborations. These results align with the findings from the authors' citation analysis. A similar pattern of collaborations was observed in the study conducted by Gómez-Domínguez et al., (2022) in their bibliometric study on teacher burnout. The co-citation analysis results highlighted C. Day as the most co-cited author, followed by Q. Gu.

The co-occurrence analysis of keywords revealed prominent terms such as "resilience," "teacher resilience," "teacher education," "teacher," "early career teachers," "teacher candidates," "professional learning," "school leadership," and "Covid-19". It's noteworthy that novice teachers often face heightened stress and attrition rates, as indicated by Ingersoll and

Strong (2011). Addressing this attrition and fostering sustainability in the teaching profession is contingent on enhancing teacher resilience (Johnson et al., 2016). The prominence of terms like "school leadership" and "leadership" suggests the supportive role that school administrators play in bolstering teacher resilience (Le Cornu, 2013). Additionally, it underscores the importance of administrators cultivating their own resilience (McLeod and Dulsky, 2021).

Moreover, the analysis highlighted that terms such as “well-being,” “motivation,” “burnout,” “job satisfaction,” and “stress” were frequently discussed in conjunction. Similar word patterns were also identified in the study by Gómez-Domínguez et al. (2022). Several studies underscore the pivotal role of teacher resilience in sustaining and enhancing teachers' well-being (Hascher et al., 2021; Mansfield et al., 2016). Research indicates that individuals with higher levels of resilience are more adept at coping with stress and are less prone to experiencing burnout (Chen et al., 2022; Daniilidou et al., 2020). These findings underscore the the multifaceted impact of resilience in the teaching profession.

Conclusion

The results of the study highlight the diverse and multidimensional nature of teacher resilience research, covering topics ranging from technology integration and pandemic-related challenges to teacher well-being, professional development, leadership, and pre-service teacher experiences. Findings indicated that several prominent researchers in the fields of resilience and research methods were prominently featured on the co-citation map. Research on this topic primarily focused on pre-service teachers and early career teachers. Findings underline the multidimensional nature of resilience in the teaching profession, encompassing not only individual teacher characteristics but also the supportive environment provided by educational institutions and leadership.

Limitations of the Study and Recommendations

The strengths of this study include the use of the PRISMA diagram to systematize the data, the detailed description of data selection procedures such as the indexes used, data type and language criteria, and the specification of search terms. However, the data of this study is limited to the contents indexed in the Web of Science database. Bibliometric analysis of the contents in SCOPUS and different databases can be performed. In addition, publications such as editor's notes, book chapters and conference proceedings are among the exclusion criteria.

Systematic review studies including these data and using different search terms can be conducted. Furthermore, research can explore diverse review methods, including thematic content analysis, systematic review, and meta-analysis. The data indicates that there is limited research output on this subject in Turkey. This suggests a need for more research on teacher resilience specifically within the Turkish context. The research outcomes are anticipated to provide valuable insights for initiatives aimed at enhancing teachers' resilience. Consequently, greater attention can be directed toward the affective traits of pre-service teachers, such as resilience, burnout, and well-being, within teacher training programs. Raising awareness about the pivotal role of resilience in the personal and professional growth of teachers is crucial. Therefore, integrating resilience training into both pre-service and in-service teacher education programs can be a strategic approach to foster teachers' well-being and effectiveness.

References

Acedo, F. J., Barroso, C., Casanueva, C., & Galan, J. L. (2006). Co-authorship in management and organizational studies: An empirical and network analysis. *Journal of Management Studies, 43*(5), 957-983.

Beltman, S., Mansfield, C., & Price, A. (2011). Thriving not just surviving: A review of research on teacher resilience. *Educational Research Review, 6*(3), 185–207.

Chen, J. J., Li, Z., Rodrigues, W., & Kaufman, S. (2022). Thriving beyond resilience despite stress: A psychometric evaluation of the newly developed Teacher Stress Scale and Teacher Thriving Scale. *Frontiers in Psychology, 13*, 862342.

Daniilidou, A., Platsidou, M., & Gonida, E. (2020). Primary school teachers resilience: association with teacher self-efficacy, burnout and stress. *Electronic Journal of Research in Education Psychology*, *18*(52), 549-582.

Day, C., & Gu, Q. (2014). *Resilient teachers, resilient schools: Building and sustaining quality in testing times.* Routledge.

Day, C., & Hong, J. (2016). Influences on the capacities for emotional resilience of teachers in schools serving disadvantaged urban communities: Challenges of living on the edge. *Teaching and Teacher Education, 59*(2016), 115-125.

Gómez-Domínguez, V., Navarro-Mateu, D., Prado-Gascó, V. J., & Gómez-Domínguez, T. (2022). How much do we care about teacher burnout during the pandemic: A bibliometric review. *International Journal of Environmental Research and Public Health*, *19*(12), 7134.

Gu, Q. (2017). Resilient teachers, resilient schools: Building and sustaining quality in testing times. In X. Zhu, A. L. Goodwin, & H. Zhang (Eds.), *Quality of teacher education and learning* (pp. 119-144). Springer.

Gu, Q., & Day, C. (2013). Challenges to teacher resilience: Conditions count. *British Educational Research Journal*, *39*(1), 22–44.

Hallinger, P., Gümüş, S., & Bellibaş, M. Ş. (2020). 'Are principals instructional leaders yet?' A science map of the knowledge base on instructional leadership, 1940–2018. *Scientometrics, 122*, 1629–1650.

Hascher, T., Beltman, S., & Mansfield, C. (2021). Teacher wellbeing and resilience: Towards an integrative model. *Educational Research*, *63*(4), 416-439.

Henderson, N., & Milstein, M. M. (2003*). Resiliency in schools: Making it happen for students and educators* (Updated edition). Corwin Press.

Ingersoll, R. M., & Strong, M. (2011). The impact of induction and mentoring programs for beginning teachers: A critical review of the research. *Review of Educational Research, 81*(2), 201-233.

Johnson, B., Down, B., Le Cornu, R., Peters, J., Sullivan, A., Pearce, J., & Hunter, J. (2016). *Promoting early career teacher resilience: A socio-cultural and critical guide to action*. Routledge.

Le Cornu, R. (2013). Building early career teacher resilience: The role of relationships. *Australian Journal of Teacher Education, 38*(4), 1-17.

Mansfield, C. F. (2021). *Cultivating teacher resilience: International approaches, applications and impact.* Springer.

Mansfield, C. F., Beltman, S., Broadley, T., & Weatherby-Fell, N. (2016). Building resiliencein teacher education: An evidenced informed framework. *Teaching and Teacher Education, 54*, 77-87.

Masten, A. S., Best, K. M., & Garmezy, N. (1990). Resilience and Development: Contributions from the study of children who overcome adversity. *Development and Psychopathology, 2*(4), 425-444.

McLeod, S., & Dulsky, S. (2021). Resilience, reorientation, and reinvention: School leadership during the early months of the COVID-19 pandemic. *Frontiers in Education, 6*, 637075.

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *Annals of Internal Medicine, 151*(4), 264–269.

Perianes-Rodriguez, A., Waltman, L., & Van Eck, N.J. (2016). Constructing bibliometric networks: A comparison between full and fractional counting. *Journal of Informetrics, 10*(4), 1178-1195.

Schwarze, J., & Wosnitza, M. (2018). How does apprentice resilience work? In M. Wosnitza, F. Peixoto, S. Beltman, & C. Mansfield (Eds.) *Resilience in Education* (pp:35-51). Springer.

Van Eck, N. J., & Waltman, L. (2014). Visualizing bibliometric networks. In Y. Ding, R. Rousseau, & D. Wolfram (Eds) *Measuring scholarly impact* (pp: 285-320). Springer.

Wang, Y. (2021). Building teachers' resilience: Practical applications for teacher education of China. *Frontiers Psychology, 12*, 738606.

Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods,18*(3), 429–472.