Teacher Burnout and Well-being: A Bibliometric Review of 25 Years of Research

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Abstract: Teacher burnout is a growing global issue, particularly in the context of prolonged stress and its impact on educators' physical and emotional health, as well as their professional efficacy and overall well-being. This phenomenon has garnered increasing attention over recent years, especially since the COVID-19 pandemic, which exacerbated stressors faced by teachers, leading to higher burnout rates. This study aims to provide a bibliometric review of research on teacher burnout and well-being over the past 25 years, mapping out key trends, influential authors, and the major topics explored in this field. Using systematic literature review (SLR) guidelines and data from the Scopus and Web of Science databases, the study examines publication patterns, collaboration networks, and prevalent research themes. The results highlight a significant rise in publications related to teacher burnout post-pandemic, with a particular emphasis on emotional exhaustion, work engagement, and well-being interventions such as mindfulness and physical activities. Additionally, the review identifies gaps in the literature, such as a lack of focus on the long-term consequences of burnout and the systemic factors that contribute to it. The contribution of this study is twofold: it expands the understanding of teacher burnout by synthesizing a large body of literature and provides insights for future research, particularly in terms of effective interventions and addressing systemic issues within educational institutions.

Keywords: Teacher Burnout, Well-Being, Bibliometric Analysis, Emotional Exhaustion, Teacher Interventions

INTRODUCTION

Teacher burnout, a phenomenon that has gained increasing global attention, refers to the physical and emotional exhaustion experienced by educators due to prolonged stress, leading to a decline in professional efficacy and overall well-being. This issue has existed for decades and has been escalating in recent years, particularly since the COVID-19 pandemic. Research indicates that the pandemic has exacerbated the stressors experienced by teachers, resulting in a rise in burnout levels (Gómez-Dominguez et al., 2022)(Sánchez-Pujalte et al., 2021). Globally, countries such as the United States, China, and Spain have reported a significant

increase in research related to teacher burnout, with growing recognition of the negative impact of this phenomenon on educators and students. For example, a bibliometric review by (Salonen et al., 2025) (Gómez-Dominguez et al., 2022). showed that teacher burnout increased sharply during the pandemic, affecting not only teacher retention rates but also the quality of education provided to students. This phenomenon has become a critical topic for educational institutions, policymakers, and researchers, as it significantly affects the effectiveness of education systems worldwide (Fox et al., 2020).

The issue of teacher burnout holds substantial significance in educational theory, practice, and broader social goals. The United Nations Sustainable Development Goals (SDGs), particularly Goal 4 (Quality Education), emphasize the importance of inclusive, equitable, and quality education and the promotion of lifelong learning opportunities for all. Teacher well-being is closely linked to the quality of education, and burnout directly undermines this goal (Tikkanen et al., 2021).

Moreover, the National Master Plan for Research, which prioritizes research in education, health, and social development, also highlights the need to explore the mental health and well-being of educators (Almurtaji et al., 2025). Within this national agenda, improving teacher well-being aligns with broader objectives of strengthening human resources, advancing education, and ensuring that educators remain motivated and effective in their roles. Additionally, addressing teacher burnout is relevant to Asta Cita Prabowo, especially in strengthening education and human resources, to ensure that teachers contribute to the nation's sustainable development through their well-being (Beames et al., 2023) (Załuska et al., 2020).

Recent research on teacher burnout has focused on identifying causes, impacts, and interventions. Studies such as those conducted by (Li et al., 2024). show that research on burnout has been extensively studied over the last five decades, with a significant increase since 2012. Key areas of focus include stress, self-efficacy (confidence in facing classroom challenges), job satisfaction, and emotional intelligence in teachers. A recent review by (Wang et al., 2025). explored various types of interventions aimed at reducing burnout, such as mindfulness practices, physical activity, and professional development programs. These interventions show potential in reducing burnout and enhancing teacher well-being. Moreover, the prevalence of burnout, which ranges from 25% to 74%, has been found to vary across countries and educational contexts, with stress, anxiety, and depression being common issues among teachers (Almurtaji et al., 2025). Research also identifies factors influencing teacher well-being, such as emotional regulation, work environment, and self-efficacy, as important contributions to recent studies (Uzun & Karataş, 2025)

Although the number of studies on teacher burnout continues to grow, there are still significant gaps in knowledge. First, while much of the literature addresses the causes and impacts of burnout, less attention has been paid to the long-term consequences of burnout on educators' careers and the education system as a whole. Additionally, there is a lack of comprehensive studies evaluating the effectiveness of various interventions across different cultural and educational contexts (Piyakun & Salim, 2023). Existing research has mainly focused on individual factors but has not sufficiently explored systemic issues such as institutional support and policies that could help reduce burnout. Therefore, there is a clear need for further research to explore these overlooked aspects, with an emphasis on global perspectives and cross-country comparisons(Chiu & Fleming, 2025).

The main issue addressed in this study is the increasing prevalence of burnout among teachers, particularly in the context of contemporary challenges such as the COVID-19 pandemic, as well as the lack of exploration into systemic factors that could mitigate this problem. Teacher burnout not only damages the well-being of educators but also threatens the overall effectiveness of the education system (Qin et al., 2022).

If the issue of teacher burnout is not properly addressed, its impact can be substantial, both practically and theoretically. Practically, high levels of burnout can lead to increased teacher turnover, which will disrupt the education system, hinder student learning, and raise educational costs (Bekker et al., 2024). Theoretically, neglecting teacher well-being can impede the development of stronger teacher support models and more comprehensive education systems, which, in turn, affects future research and policy (Hidayati et al., 2025).

The primary goal of this study is to conduct a bibliometric review of 25 years of research on teacher burnout and well-being by synthesizing existing literature. This research aims to identify publication trends in this field, including the number of publications per year, the academic disciplines involved, as well as the contributions of countries and their collaborations; determine the most influential authors, journals, and articles based on publication counts, citations, and contributions; analyze the main topics that have been studied and their distribution or interconnections; and explore potential topics for future research in the field of teacher burnout and well-being.

This study will make an important contribution to the existing literature by providing a comprehensive review of the development of teacher burnout research over the past 25 years, as well as offering insights into the evolution of this field. Academically, this research will expand our understanding of burnout, its causes, and effective interventions. Practically, the findings of this study can provide valuable information to policymakers, educators, and researchers regarding the critical factors that affect teacher well-being and the most effective types of interventions to reduce burnout.

METHOD

This study uses a bibliometric approach within the framework of a systematic literature review (SLR) organized according to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) 2020 guidelines. The aim of this study is to map the development of literature related to teacher burnout and well-being over the past 25 years (2000–2025), focusing on publication trends, scientific collaboration, and the most frequently researched topics. A bibliometric approach was chosen due to its ability to reveal quantitative patterns in the scientific literature, including collaboration networks and key research domains (Oberg et al., 2025) (Friesen et al., 2023).

The literature was gathered using two internationally indexed scientific databases, Scopus and Web of Science, to ensure the quality and relevance of the research results. The search strategy was systematically designed using the following Boolean combination:

(TITLE-ABS-KEY (Teacher Burnout) AND TITLE-ABS-KEY (Well-being) AND PUBYEAR > 2014 AND PUBYEAR < 2026 AND (LIMIT-TO (DOCTYPE, "ar") AND (LIMIT-TO (LANGUAGE, "English") AND (LIMIT-TO (OA, "all") AND (LIMIT-TO (SUBJAREA, "SOCI")

This query was designed to focus the search results on journal articles (articles), written in English, available in open access, and within the social science domain. Publication years were restricted between 2015 and 2025 to ensure the relevance and currency of the literature (Sai et al., 2025) (Narea et al., 2022).

The selection process followed the four main stages of PRISMA: identification, screening, eligibility, and inclusion. In the identification stage, all search results from both databases were exported to reference management software (such as Mendeley or Zotero), then deduplicated. The screening stage was carried out based on titles and abstracts to exclude irrelevant articles. Next, the eligibility stage assessed the full text of articles that passed the initial selection to ensure the content's relevance to the topics of burnout and well-being in the context of teachers. Articles that met all criteria were included in the final inclusion stage for further analysis (Al-Kandari et al., 2025) (Wang et al., 2025).

The bibliometric analysis was conducted using VOSviewer and the Bibliometrix R-package. Network visualisation was employed to explore collaborations among authors, institutions, and countries, as well as to identify the most frequently occurring keywords. In addition, a temporal trend analysis was performed to observe the evolution of themes over time. This step is essential for understanding how research focus on teacher burnout and well-being has shifted and developed over the past two decades (Almurtaji et al., 2025) (Juhji et al., 2023).

The results of this process are presented in a PRISMA flow diagram, which illustrates the number of publications at each selection stage. This study contributes to the literature by providing a systematic and visual mapping of current research directions related to teacher well-being and the challenges of burnout, as well as serving as a foundation for future researchers to design empirical studies or more in-depth thematic systematic reviews (Eblie Trudel & Sokal, 2023) (Khajehnasiri et al., 2022).

RESULT AND DISCUSSION
Identifying Publication Trends, Topics, and the Growth of Teacher Burnout Research Globally.

To comprehensively understand the development of research on teacher burnout, a bibliometric analysis was conducted to identify publication trends, topics, and the growth of research at the global level. The following graph presents the distribution of scientific publications on teacher burnout by year, illustrating the dynamic increase in academic attention to this issue over time.
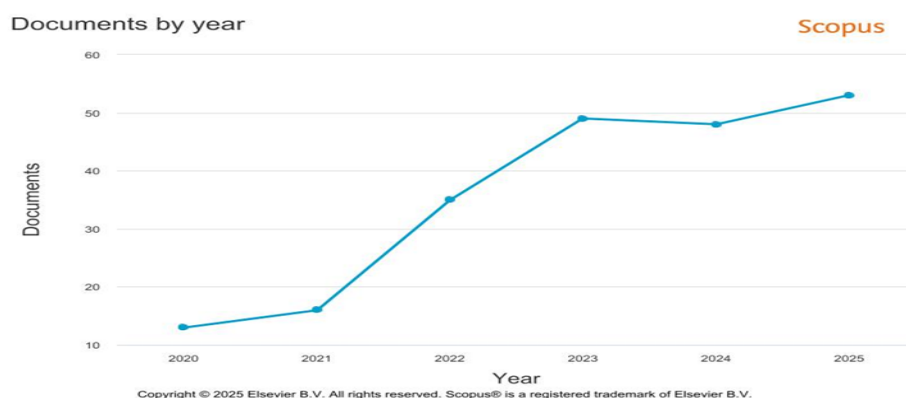

Figure 1 shows the trend in the number of scientific publications related to teacher burnout indexed in the Scopus database during the 2020–2025 period. In general, there has been a significant increase in the number of documents published from year to year. In 2020, the number of publications was recorded at around 13 documents, with a moderate increase in 2021. A sharp surge occurred in 2022, with nearly double the number of publications compared to the previous year, indicating growing academic interest in the issue of teacher burnout in the post-COVID-19 pandemic period.

The peak of publications occurred in 2023, with nearly 50 documents, reflecting very high research intensity during that period. Although there was a slight decline in 2024, the trend rose again in 2025, with the number of publications exceeding 50 documents. This pattern indicates that teacher burnout has become an increasingly prominent topic of sustained research in the global literature, in line with the growing awareness of the importance of teacher well-being in the context of the post-pandemic era and global educational transformation.

Documents by subject area

Scopus

Other (7.3%)
Agricultural an... (2.1%)
Environmental S... (2.3%)
Business, Manag... (2.6%)
Neuroscience (3.3%)
Health Professi... (3.3%)
Medicine (3.5%)
Computer Scienc... (4.0%)
Arts and Humani... (5.9%)
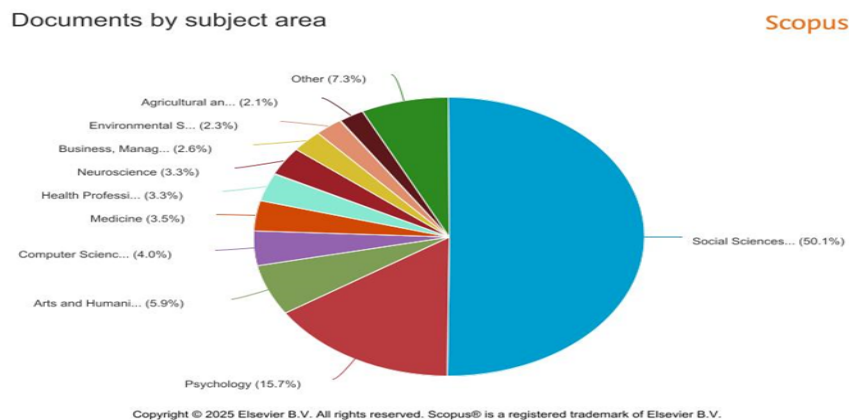
Social Sciences... (50.1%)

Psychology (15.7%)

Figure 2 illustrates the trend in the number of scientific publications related to teacher burnout indexed in the Scopus database during the period 2020–2025. Overall, there has been a significant increase in the number of documents published year by year. In 2020, the number of publications was recorded at around 13 documents, with a moderate increase in 2021. A sharp surge occurred in 2022, with almost double the number of publications compared to the previous year, indicating a growing academic interest in the issue of teacher burnout in the post-COVID-19 pandemic context.

The peak in publications occurred in 2023, with nearly 50 documents, reflecting a very high level of research activity during that period. Although there was a slight decline in 2024, the trend rose again in 2025, with the number of publications exceeding 50 documents. This pattern indicates that teacher burnout has become a research topic that is receiving increasing and sustained attention in the global literature, in line with the growing awareness of the importance of teacher well-being in the post-pandemic era and the transformation of global education.

Documents by country or territory

Scopus

Compare the document counts for up to 15 countries/territories.

United States
Spain
Finland
Canada
China
United Kingdom
Australia
Malaysia
Turkey
Chile

0   2.5   5   7.5   10   12.5   15   17.5   20   22.5   25   27.5   30   32.5
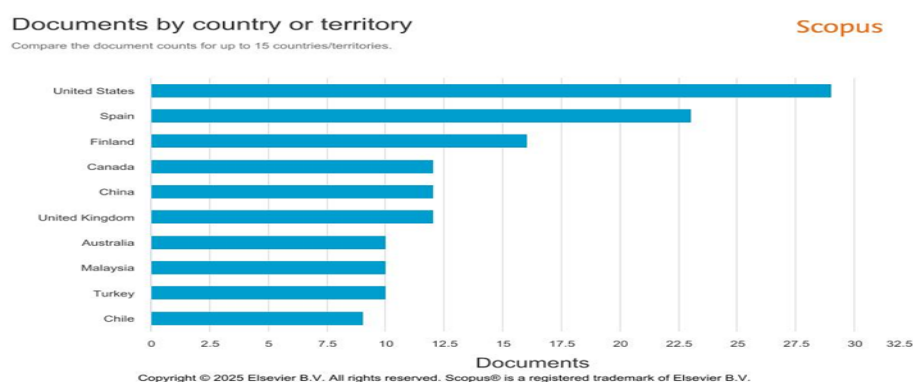
Documents

Figure 3 presents the distribution of scientific publications on teacher burnout based on the country of origin of the researchers, as indexed in Scopus. Overall, the graph shows that research on teacher burnout is dominated by countries with advanced education systems and strong attention to the well-being of educators.

The United States ranks at the top with the highest number of publications—around 30 documents—affirming its dominant role as a global research hub in the study of teacher burnout. This is followed by Spain and Finland, each with significant contributions, reflecting the strong research traditions in education and occupational psychology in the European region.

Countries such as Canada, China, and the United Kingdom also demonstrate relatively high levels of productivity, indicating broad interest in the issue of teacher well-being across different cultural and educational systems. Meanwhile, Australia, Malaysia, Turkey, and Chile reflect the active engagement of countries from the Asia-Pacific and Latin American regions in expanding the global discourse on burnout among educators.

Overall, this pattern indicates that the phenomenon of teacher burnout has become a transnational and cross-cultural research issue, with strong contributions from Western countries, while also showing increasing participation from developing countries. This reflects the growing global awareness of the importance of teacher mental health and well-being as a key determinant of education quality.
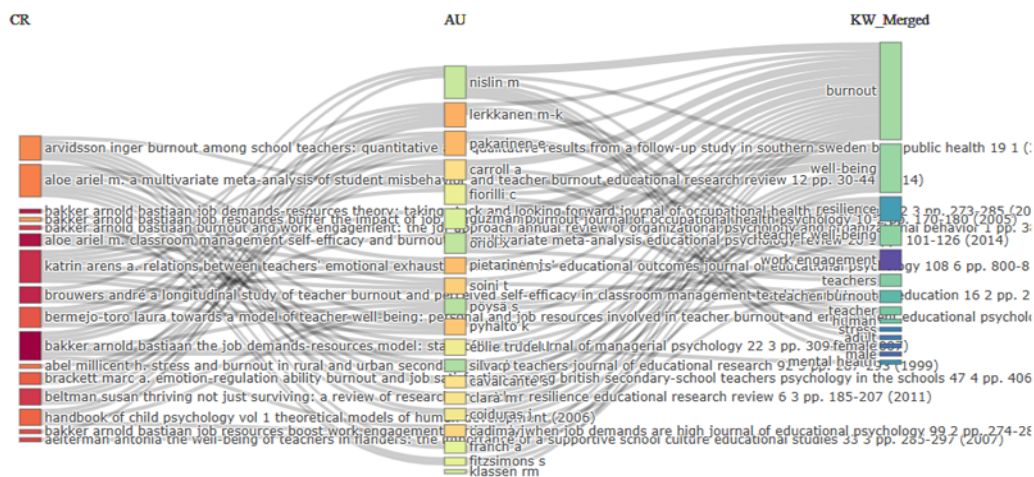

Figure 4 displays a Sankey diagram visualising the relationships between cited references (CR), authors (AU), and research keywords (KW) in the field of teacher burnout indexed in Scopus. The diagram illustrates the flow of intellectual and thematic connections between publications, authors, and the key concepts underpinning this research area.

It can be observed that several prominent authors—such as Arnold B. Bakker, Ariel M. Aloe, Inger Arvidsson, Millicent H. Abel, and Mark Brackett—occupy central positions within this scholarly network. Their works often reference the Job Demands–Resources (JD-R) theory developed by Bakker and Demerouti, which forms a key foundation in understanding the dynamics between job demands, job resources, and manifestations of burnout in teachers.

The most dominant keyword is "burnout", closely linked to other terms such as "well-being", "work engagement", and "emotional exhaustion", indicating that research in this field is not only focused on aspects of job-related fatigue but is increasingly emphasising positive psychological dimensions, such as well-being and work engagement.

Additionally, the connections among authors from various countries—such as Finland (Lerkkanen M.-K., Pietarinen J.), the Netherlands (Bakker A.B.), and the United States (Klassen R.M.)—indicate the existence of a strong collaborative network in global teacher burnout research. These cross-national links suggest that studies on teacher burnout have an international and multidisciplinary character, encompassing perspectives from psychology, education, and organisational management.

Overall, this diagram shows that teacher burnout research is grounded in well-established theories of occupational psychology and that its orientation is increasingly shifting—from merely understanding stress and exhaustion towards mapping teacher well-being and resilience within their professional contexts.

Identifying the Most Productive and Influential Authors, Institutions, and Countries in this Field

To gain a more comprehensive understanding of the landscape of teacher burnout research, a bibliometric analysis was conducted to identify the most productive and influential authors, institutions, and countries in this field.

The following mapping results present the global scientific contributions based on the number of publications, reflecting the productivity levels and strategic roles of various academic entities in the development of teacher burnout research.
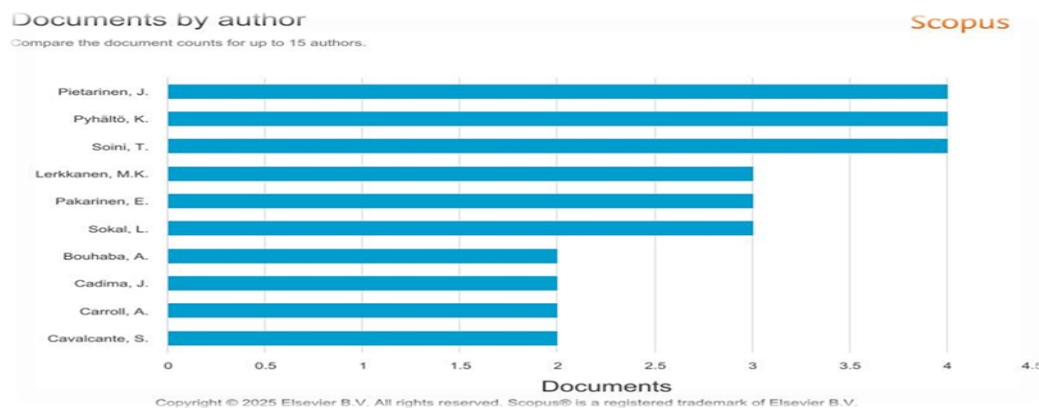

Figure 5 shows a list of the most productive authors in the field of teacher burnout research indexed in Scopus. Based on the analysis, it is evident that the highest level of scientific productivity comes from Pietarinen, J., Pyhältö, K., and Soini, T., each with approximately four publications. These researchers are known for their active work in studying teacher burnout from the perspectives of educational psychology and school organizational dynamics, particularly in the context of education in Finland.

Other authors who have made significant contributions include Lerkkanen, M.K. and Pakarinen, E., who have played a key role in expanding the understanding of the relationship between teacher well-being, work engagement, and teaching effectiveness. Additionally, names such as Sokal, L., Bouhaba, A., Cadima, J., Carroll, A., and Cavalcante, S. have enriched the global literature through cross-cultural research and educational policy studies.

This distribution indicates that research on teacher burnout tends to be centered around groups of researchers who have strong collaborative networks and a consistent thematic focus. The dominance of Finnish researchers on this list further emphasizes Finland's reputation as one of the leading centers for teacher well-being and educational psychology research at the international level. Therefore, the pattern of author contributions in this chart reflects an academic constellation oriented towards collaborative and contextual approaches in understanding burnout among educators.
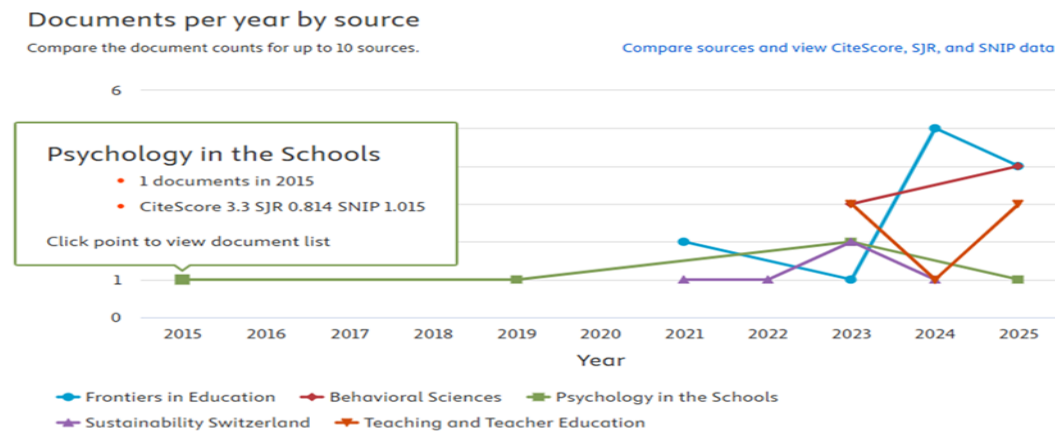
Figure 6 illustrates the distribution of scientific publications on teacher burnout based on journal sources and publication years indexed in Scopus. In general, the graph shows an increasing trend in publication dynamics across several prominent academic journals during the 2020–2025 period, indicating that the issue of teacher burnout is gaining more attention across disciplines and reputable publication forums.

The journal Frontiers in Education appears as one of the most active publication sources, with a sharp increase in 2024, followed by Behavioral Sciences and Teaching and Teacher Education, both of which have shown consistency in publishing articles related to this topic. Meanwhile, Psychology in the Schools has had early contributions since 2015, with a strong quantitative index (CiteScore 3.3; SJR 0.814; SNIP 1.015), reflecting high academic quality despite a more limited volume of publications.

Additionally, Sustainability (Switzerland) has emerged as an important platform highlighting the dimensions of sustainability and well-being in the context of education, indicating an expansion of the conceptual perspective of teacher burnout toward a multidisciplinary study that links occupational psychology with sustainable development.

This pattern suggests that research on teacher burnout has evolved from a traditional psychological focus toward a more holistic and cross-disciplinary approach, involving pedagogical, behavioral, and sustainability aspects of education systems. Therefore, the increasing intensity of publications in various internationally reputable journals reinforces the position of teacher burnout as a strategic research theme in the global discourse on teacher well-being and effectiveness.
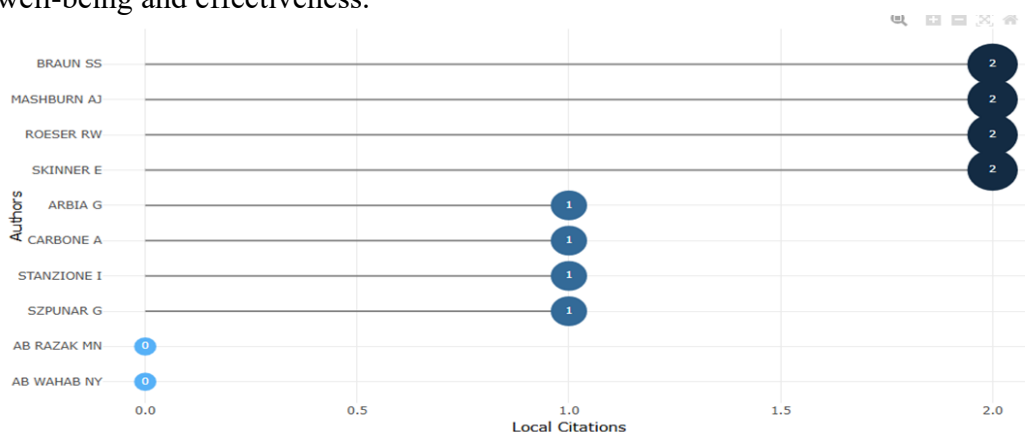

Figure 7 displays the distribution of authors based on the number of local citations in teacher burnout research, analyzed using the Scopus database. This graph illustrates the extent to which an author's scholarly work has been recognized and cited by other research within the same domain, reflecting the scientific impact in the field.

From the analysis, it is evident that four authors—Braun S.S., Mashburn A.J., Roeser R.W., and Skinner E.—show the highest number of local citations, each with two citations. This position indicates that their works have strong conceptual and methodological relevance, and are key references in subsequent studies on teacher burnout, particularly in the context of educational psychology and teacher-student interactions.

Meanwhile, groups of authors such as Arbia G., Carbone A., Stanzione I., and Szpunar G. have each received one local citation, suggesting their contributions are beginning to be recognized within the research community, though with relatively limited influence. Two other authors, Ab Razak M.N. and Ab Wahab N.Y., have not yet received any local citations, which could indicate that their research is either a recent contribution or still in the early stages of academic dissemination.

Overall, this citation pattern shows that the structure of scientific influence in the field of teacher burnout is still centered around a small group of productive and frequently cited researchers. This phenomenon reflects the existence of a dominant academic cluster that plays a crucial role in shaping both the theoretical and empirical direction of teacher burnout research at the global level.

Analyzing Scientific Collaboration Patterns Among Researchers and Institutions.

To understand the dynamics of the knowledge network in teacher burnout research, a bibliometric analysis was conducted to identify collaboration patterns among researchers and institutions at the global level.

The aim of this collaboration mapping is to show the extent to which academic interactions and partnerships contribute to strengthening research productivity and the dissemination of knowledge across countries and institutions.
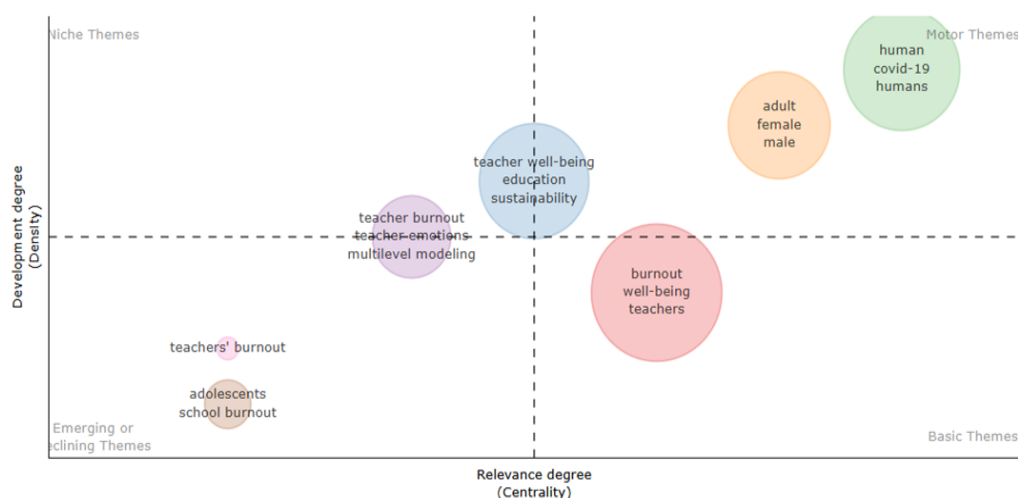

Figure 8 presents a thematic map that illustrates the positioning and interconnections of the main themes in teacher burnout research based on two analytical dimensions: relevance (centrality) and development (density). This map helps identify topics that are central, developing, or still peripheral in the academic literature.

In the upper-right quadrant (motor themes), clusters such as "human," "COVID-19," and "humans" appear, indicating a research focus with high relevance and a well-developed stage. These themes suggest that teacher burnout studies are expanding in context, particularly toward the impact of the COVID-19 pandemic on teacher well-being and adaptation, especially in online learning environments and post-pandemic social changes.

The lower-right quadrant (basic themes) is dominated by themes like "burnout," "well-being," and "teachers," which are the core and most fundamental concepts in this study. The

size of the cluster indicates that these topics serve as central conceptual concepts that form the foundation for various subsequent studies, particularly concerning the connection between emotional exhaustion, work engagement, and teacher psychological well-being.

Meanwhile, the middle quadrant (developed but isolated themes) shows clusters such as "teacher well-being," "education," and "sustainability," reflecting a new developmental direction toward interdisciplinary approaches. These themes mark a shift in research focus from merely identifying burnout symptoms to strategies for ensuring teacher well-being sustainability within a dynamic education system.

The lower-left quadrant (emerging or declining themes) highlights themes like "teachers' burnout," "adolescents," and "school burnout," which have relatively low relevance and a limited level of development. These themes likely represent emerging research areas, particularly in the context of age and educational level variations.

Overall, this thematic map shows that teacher burnout research is undergoing a conceptual transition from studies based on psychological symptoms toward a more comprehensive approach, emphasizing well-being, sustainability, and the influence of social factors in the post-pandemic context.
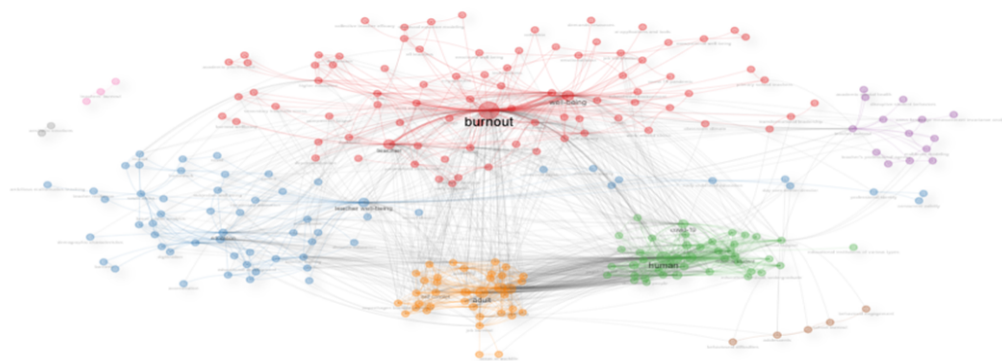

Figure 9 displays the keyword co-occurrence network in teacher burnout research indexed in Scopus. This visualization represents the conceptual relationships between topics that frequently appear together in the literature, illustrating the intellectual structure and research development direction in this field.

The keyword "burnout" occupies the central position with the largest node size, indicating the highest level of association with various other concepts. It forms the main red cluster, which is closely associated with terms such as "well-being," "stress," "mental health," and "coping strategies." This cluster highlights the dominant focus on psychological well-being issues and teachers' adaptive mechanisms in coping with work-related stress, which form the core of teacher burnout studies.

The blue cluster represents the educational and pedagogical dimension, with keywords like "teacher well-being," "job satisfaction," and "self-efficacy." This indicates that teacher burnout is understood not only as an individual psychological phenomenon but also as a reflection of professional conditions and the quality of interactions within the educational context.

The green cluster, centered around keywords such as "humans," "COVID-19," and "pandemic," shows the significant influence of the global pandemic context on the intensity and direction of teacher burnout research. This theme suggests a paradigm shift in research toward crisis studies and the professional resilience of teachers in adapting to changes in their work environment.

Meanwhile, the orange and purple clusters display additional themes such as "adult," "education," "students," and "engagement," enriching the complexity of the topic by linking demographic and motivational aspects to the burnout experience.

Overall, this map shows that teacher burnout research has a multidimensional and interconnected structure, with a growing focus shifting from merely describing burnout symptoms to a more integrated understanding of teacher well-being, educational contexts, and global social factors such as the pandemic. The dense network and interconnections between clusters also reflect the intellectual maturity of the field, while opening opportunities for future interdisciplinary exploration.

Depicting the Future Research Directions and Opportunities on Teacher Burnout through Topic Evolution and Keyword Network Analysis.

The two visualizations above provide a clear picture of the future directions and focus of research related to teacher well-being, burnout, and educational sustainability.

Based on the thematic network map, it is evident that the concept of "burnout" has become the central focus of research, with broad connections to themes such as teacher well-being, education, and human factors. This indicates that teacher burnout has become a key concern in global education studies, particularly in the context of increasing work pressure, changes in learning systems, and the socio-psychological impacts of the post-COVID-19 pandemic. The strong connection between the "burnout" and "human" nodes also suggests a multidisciplinary approach, integrating perspectives from psychology, education, and occupational health to understand the well-being of educators.

Meanwhile, the thematic graph shows a more specific mapping of the development direction of the research. The themes "human," "COVID-19," and "humans" occupy the motor themes position, indicating that studies on human well-being in the educational context, particularly due to the pandemic, remain the central focus of dynamic academic development. The themes "teacher well-being," "education," and "sustainability" are positioned as niche themes, meaning they have a high theoretical depth and strong potential for development as a new conceptual framework in educational research. This reflects the shift toward sustainable education based on educator well-being, where the balance between professionalism, mental health, and teaching quality is key to the long-term success of the education system.

Themes like "teacher burnout," "teacher emotions," and "multilevel modeling" reflect the growing empirical and quantitative approaches to analyzing work stress factors and intervention strategies. On the other hand, "adolescent" and "school burnout," which are located in the emerging themes area, indicate a new focus on the impact of burnout among students, reflecting an important consideration of the psychosocial well-being of learners.

Therefore, future research will move toward strengthening a humanistic, adaptive, and sustainable educational model, with teacher well-being as the foundational element of educational quality. Promising research opportunities include developing burnout prevention strategies based on spirituality and Islamic values, integrating teacher well-being policies into national education systems, and studying the relationship between educators' emotional well-being and teaching effectiveness in building a healthy and socially just educational ecosystem.

Discussion
Identifying Publication Trends, Topics, and the Growth of Teacher Burnout Research Globally.

The combined findings from the bibliometric analysis (Scopus 2020–2025) show that research on burnout and academic resilience has grown rapidly, particularly in the context of teachers, students, and healthcare workers. The significant increase in publications during the
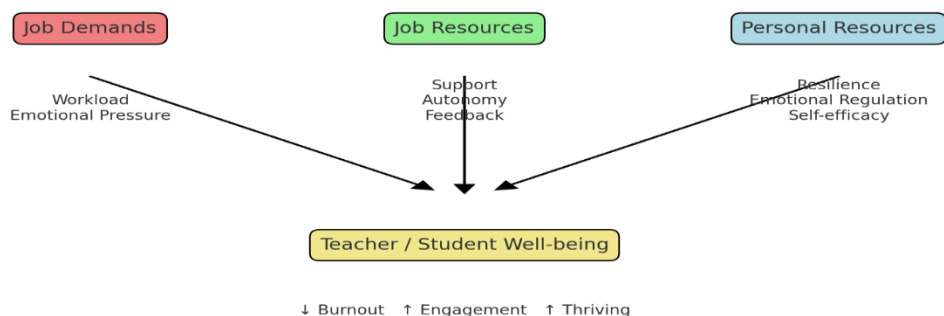
2022–2025 period indicates a paradigm shift from a pathological focus (stress–burnout) to a positive psychology perspective (well-being–resilience–thriving).

The most relevant grand theory to integrate these findings is the Job Demands–Resources (JD-R) Theory (Al-Kandari et al., 2025), which serves as the main framework for understanding the balance between work pressures (demands) and resources. According to this theory, job demands such as workload and emotional pressure are risk factors that trigger burnout, while job resources (social support, autonomy, feedback) and personal resources (resilience, self-efficacy, emotional regulation) act as protective factors that enhance individual well-being.

Recent research supports the expansion of the JD-R theory by incorporating affective and motivational dimensions, as explained by (Kirschning et al., 2025), who emphasize that emotional regulation and intrinsic motivation strengthen resilience against work-related stress. Additionally, (Saad & Ali, 2025). Highlight that peer and teacher support play a crucial role in building academic resilience among medical students, in line with the social buffering model. The integrative model visualized above combines the JD-R theory with principles of positive psychology. Job demands trigger stress that can diminish well-being, but this negative effect can be counterbalanced by job resources (institutional external factors) and personal resources (internal psychological factors). Both interact synergistically to produce teacher/student well-being, manifested through reduced burnout, increased engagement, and the achievement of thriving (Österholm et al., 2025); (Pau et al., 2022).

Conceptually, this model extends the JD-R theory into the modern educational context by adding the affective-motivational resilience aspect, emphasizing that academic well-being is not just the result of managing workload but is a dynamic process influenced by the interaction between personal resources and social support. Therefore, a preventive approach to burnout should focus on strengthening resilience and fostering a collaborative culture, rather than solely reducing work demands.

Integrated Model of Academic and Occupational Resilience (JD-R Framework)

Job Demands	Job Resources	Personal Resources
Workload Emotional Pressure	Support Autonomy Feedback	Resilience Emotional Regulation Self-efficacy

Teacher / Student Well-being

↓ Burnout   ↑ Engagement   ↑ Thriving

Identifying the Most Productive and Influential Authors, Institutions, and Countries in this Field.

The increase in the number of publications from 2023–2025 in journals such as Frontiers in Education, Behavioral Sciences, and Teaching and Teacher Education signals a new dynamic in education research, particularly in the context of teacher learning and educator psychological well-being. This trend reflects a shift in research focus from merely examining learning effectiveness to a more comprehensive understanding of teacher well-being, agency, and professional identity, which have become key areas of attention after the COVID-19 pandemic (Eblie Trudel & Sokal, 2023).

Based on Self-Determination Theory (SDT) by Deci & Ryan, autonomous motivation and contextual support are key factors in explaining why recent research emphasizes the importance of social support and work environment in improving teacher well-being and performance (Olčar et al., 2023).

Furthermore, the collaboration among authors, as seen in the first graph—where Pietarinen, Pyhältö, and Soini dominate—indicates the formation of a strong research network in the field of education and school psychology. Recent studies show that cross-institutional and cross-national collaboration has become a primary determinant of research productivity and impact, particularly in the fields of educational leadership and teacher professional development (Ding et al., 2025). This aligns with Communities of Practice Theory (Ivanii et al., 2022), which emphasizes the importance of collective practice and shared reflection in generating knowledge innovation.

In terms of novelty, data indicates a surge in contributions to interdisciplinary topics that combine psychology and sustainable education, evident in the involvement of journals like Sustainability Switzerland. Research from the past five years underscores that this interdisciplinary approach marks a transition to a transformative education paradigm, positioning teachers as agents of social and environmental change (Holdo, 2022).

This approach requires the integration of emotional literacy, digital pedagogy, and a sustainability mindset, enriching the theoretical dimensions of contemporary education research.

Thus, the findings from this graph highlight the global shift in education research toward a more holistic, collaborative approach focused on teacher well-being sustainability. The novelty of the trends from 2023–2025 lies in the emergence of integration between motivation theory (SDT), social learning (CoP), and the educational sustainability paradigm, which had previously operated separately.

Analyzing Patterns of Scientific Collaboration Among Researchers and Institutions.

The findings from the thematic map show that the themes of "teacher well-being, education, and sustainability" occupy a central position with high relevance (centrality) and density, indicating that teacher well-being has now become a driving force in global education research. This aligns with the post-COVID-19 paradigm shift, which places the psychological well-being and professional sustainability of teachers at the core of educational quality (Freire et al., 2023); (Gilar-Corbi et al., 2025).

Based on the Job Demands-Resources (JD-R) Theory (Bakker & Demerouti), burnout occurs when high work demands are not balanced by adequate personal and social resources. Recent research confirms this theory by emphasizing the importance of organizational support, autonomy, and a positive school climate as key protectors against teacher emotional exhaustion (Oberg et al., 2025).

The keyword network mapping shows that "burnout" is the central node linking various topics such as teacher emotions, multilevel modeling, and sustainability education, indicating that research approaches are becoming more systemic and interdisciplinary. The emerging multilevel approach in the map strengthens the finding that teacher well-being depends not only on individual factors but also on social and institutional contexts (Angelini et al., 2024).

Bronfenbrenner's Ecological Systems Theory supports this view by explaining that burnout is the result of the interaction between the individual and systemic environments (micro, meso, and macro), including educational policies and school culture, which affect the work-life balance.

Additionally, the theme of "education sustainability" in the motor themes area indicates that teacher well-being research is increasingly linked with the goals of educational and social sustainability. Recent studies show that teachers with high well-being levels tend to be more

proactive in implementing sustainable education principles, such as reflective learning, digital innovation, and environmental consciousness (Khajehnasiri et al., 2022) (Mercer, 2023).

This integration suggests an evolution in the concept from "teacher well-being" to "sustainable teacher well-being," which refers to well-being conditions that can sustain and support the holistic sustainability of the education system.

From a novelty perspective, the results of this analysis show that contemporary research has shifted from descriptive studies of teacher burnout to conceptual models that integrate well-being, resilience, and educational sustainability into a unified framework. These findings highlight the urgency of developing intervention models that not only target stress reduction but also build an adaptive, reflective, and psychologically and socially sustainable educational ecosystem (Pagán-Garbín et al., 2024).

Thus, the novelty of this research lies in the integration of the JD-R theory, ecological systems theory, and the educational sustainability paradigm to comprehensively and contextually understand teacher well-being dynamics.

Depicting the Future Directions and Opportunities for Teacher Burnout Research through Topic Evolution and Keyword Network Analysis.

Based on the two bibliometric visualizations provided, the themes of "teacher well-being," "burnout," and "education sustainability" appear as central nodes (motor and basic themes), indicating that teacher well-being and burnout are not only core concepts but also serve as connectors to other themes such as psychology, the COVID-19 pandemic, and gender factors. This finding shows that current research is moving toward a systemic and relational understanding of burnout, not only at the individual level but also within the social and organizational context of education.

Recent research using network analysis reveals that teacher burnout arises from the complex interaction of psychological symptoms, such as emotional exhaustion and decreased sense of accomplishment, which mutually influence each other within the psychological network (Xu et al., 2024).

The connection between psychological capital (optimism, hope, self-efficacy) and burnout shows that interventions based on strengthening psychological resources can reduce emotional exhaustion symptoms. This aligns with findings by (Narea et al., 2022), which indicate that mindfulness and teacher self-efficacy are crucial bridging nodes in the burnout network, reinforcing the assumption of Conservation of Resources Theory (Hobfoll), which states that maintaining psychological resources is key to resilience against chronic stress.

Furthermore, other studies highlight the role of organizational identity and locus of control as important determinants of teacher well-being. Research by (Altinay & Bicentürk, 2023) found that a strong professional identity and an internal locus of control reduce emotional exhaustion and depersonalization, while a weak organizational identity increases the risk of burnout. These findings strengthen the Job Demands-Resources (JD-R) Model, which emphasizes the balance between work demands and organizational resources as the primary predictor of workplace well-being. The integration of this theory with recent empirical findings suggests that the development of a sustainable learning ecology based on professional identity and organizational support is a new direction in teacher burnout research.

Social connectivity also plays a significant role in the burnout phenomenon. Network-based studies by (Fináncz et al., 2020) and (Załuska et al., 2020) show that burnout is "contagious" through social networks, especially in emotionally close school teams. This suggests that improving individual teacher well-being needs to be complemented by collective, team-based interventions to prevent the spread of psychological exhaustion in the workplace.

The novelty of current research lies in the strengthening of an integrative approach—combining network analysis, positive psychology, and organizational sustainability to explain

teacher burnout as an ecosystemic phenomenon, rather than just an individual condition. This approach opens up new directions for developing interventions based on collective well-being, emphasizing the importance of building resilient learning communities that sustain teacher well-being over time. Thus, these findings affirm that teacher well-being not only impacts the quality of education but also serves as the foundation for the overall sustainability of the education system.

CONCLUSION

Overall, the findings from this bibliometric analysis reveal that research on teacher burnout has evolved from a pathological paradigm to a positive and sustainable paradigm rooted in the integration of psychology, education, and social sustainability theories. This transformation is marked by a shift in focus from merely identifying risk factors for work exhaustion to systemic efforts to build teacher well-being and academic resilience as the foundation for educational sustainability. Key theories such as the Job Demands–Resources (JD-R) Theory, Self-Determination Theory (SDT), and Ecological Systems Theory have become increasingly integrated conceptual foundations in explaining the dynamic balance between work demands, personal resources, and social support.

From a scientific productivity perspective, the emergence of cross-institutional and cross-national collaborations has strengthened the formation of a global research network, playing a significant role in expanding the scope and scientific impact of this field. The interdisciplinary trend, blending aspects of positive psychology, emotional literacy, and educational sustainability, demonstrates the scientific maturity of post-pandemic research, while also steering academic discourse toward a transformative education paradigm. In this context, teachers are no longer positioned merely as research subjects but as agents of social change and carriers of sustainability values in the educational ecosystem.

Theoretically, contemporary research expands the understanding of teacher burnout by linking it to the concept of sustainable well-being, emphasizing that teacher well-being is ecological, dynamic, and collective. This approach calls for multi-level interventions combining individual strategies (resilience and emotional regulation), organizational support (structural support and positive work climate), and public policies that support the sustainability of educators' professional well-being.

Thus, the future direction of teacher burnout research is moving toward the development of evidence-based integrative models oriented towards sustainable learning ecosystems. This effort will not only enrich academic literature but also have significant practical implications for global education policies, aiming to build an adaptive, collaborative, and transformative culture of well-being for the sustainability of the teaching profession and the overall quality of education.

REFERENCES

Al-Kandari, A., Baroun, A., & Alboloushi, B. (2025). THE RIGHT TO DISCONNECT: JOB DEMANDS, BURNOUT, AND WELL-BEING AMONG FEMALE TEACHERS AND REGULATORY POLICY CONTEXT. Journal of Governance and Regulation, 14(2), 299–309. https://doi.org/10.22495/jgrv14i2siart8

Almurtaji, Y. R., Alazemi, A. S. M., & Salem, A. A. M. S. (2025). The Moderating Role of Stress in the Relationship Between Burnout and Mental Health Outcomes in Teachers. Journal of Educational and Social Research, 15(3), 494–508. https://doi.org/10.36941/jesr-2025-0114

Altinay, Z., & Bicentürk, B. (2023). Constructing Sustainable Learning Ecology to Overcome Burnout of Teachers: Perspective of Organizational Identity and Locus of Control. Sustainability (Switzerland), 15(24). https://doi.org/10.3390/su152416930

Angelini, G., Mamprin, C., Borrelli, I., Santoro, P. E., Gualano, M. R., Moscato, U., & Fiorilli, C. (2024). Engaged teachers and well-being: the mediating role of burnout dimensions. Health Psychology and Behavioral Medicine, 12(1). https://doi.org/10.1080/21642850.2024.2404507

Beames, J. R., Spanos, S., Roberts, A., McGillivray, L., Li, S., Newby, J. M., O'Dea, B., & Werner-Seidler, A. (2023). Intervention Programs Targeting the Mental Health, Professional Burnout, and/or Wellbeing of School Teachers: Systematic Review and Meta-Analyses. Educational Psychology Review, 35(1). https://doi.org/10.1007/s10648-023-09720-w

Bekker, C. I., Rothmann, S., Kloppers, M. M., & Chen, S. (2024). Promoting Sustainable Well-Being: Burnout and Engagement in South African Learners. Sustainability (Switzerland), 16(19). https://doi.org/10.3390/su16198518

Chiu, E. Y. Y., & Fleming, T. (2025). The Aesthetics of Disillusionment: Teachers' Narratives of "Disillusioned Transformation." Behavioral Sciences, 15(7). https://doi.org/10.3390/bs15070858

Ding, N., Wang, Y., & Wang, Y. (2025). English as a foreign language teacher's well-being, resilience, and burnout. Porta Linguarum, 2025-January(43), 147–166. https://doi.org/10.30827/portalin.vi43.28350

Eblie Trudel, L., & Sokal, L. (2023). Dynamic perspectives on education during the COVID-19 pandemic and implications for teacher well-being. International Journal of Educational Research Open, 4. https://doi.org/10.1016/j.ijedro.2023.100241

Fináncz, J., Nyitrai, A., Podráczky, J., & Csima, M. (2020). Connections between professional well-being and mental health of early childhood educators. International Journal of Instruction, 13(4), 731–746. https://doi.org/10.29333/iji.2020.13445a

Fox, H. B., Tuckwiller, E. D., Kutscher, E. L., & Walter, H. L. (2020). What Makes Teachers Well? A Mixed-Methods Study of Special Education Teacher Well-Being. Journal of Interdisciplinary Studies in Education, 9(2), 223–248. https://doi.org/10.32674/jise.v9i2.2170

Freire, C., Ferradás, M. D. M., García-Bértoa, A., Nuñez, J. C., & Valle, A. (2023). Teacher profiles based on burnout symptoms: Differences between educational stages and relationship with adaptive psychological functioning. Revista de Psicodidactica, 28(1), 1–9. https://doi.org/10.1016/j.psicod.2022.07.001

Friesen, D. C., Shory, U., & Lamoureux, C. (2023). The role of self-efficacy beliefs and inclusive education beliefs on teacher burnout. Social Sciences and Humanities Open, 8(1). https://doi.org/10.1016/j.ssaho.2023.100599

Gilar-Corbi, R., Izquierdo, A., & Castejón, J.-L. (2025). Emotional Factors in the Psychological Well-Being of Future Teachers: A Structural Model. Journal of Intelligence, 13(6). https://doi.org/10.3390/jintelligence13060070

Gómez-Dominguez, V., Gomez-Dominguez, T., Navarro, D., & Giménez-Espert, M. D. C. (2022). The Influence of COVID-19 and Psychosocial Risks on Burnout and Psychosomatic Health Problems in Non-University Teachers in Spain during the Peak of the Pandemic Regressions vs. fsQCA. Sustainability (Switzerland), 14(20). https://doi.org/10.3390/su142013030

Hidayati, D., Imama, M. L., Hilhamsyah, H., Maysaroh, A., & Kartiwi, A. P. (2025). Digital Life Among Teachers: From Burnout to Well-Being. Educational Process: International Journal, 15. https://doi.org/10.22521/edupij.2025.15.93

Holdo, M. (2022). Critical Reflection: John Dewey's Relational View of Transformative Learning. Journal of Transformative Education, 21(1), 9–25. https://doi.org/10.1177/15413446221086727

Ivanii, I. V, Kalynychenko, I. O., Latina, H. O., Khrapatyi, S., & Liubchenko, N. (2022). Characteristics of Symptom Complexes of Professional Burnout Among Pedagogical Workers of Educational Institutions of Various Types. Journal of Higher Education Theory and Practice, 22(15), 64–72. https://doi.org/10.33423/jhetp.v22i15.5560

Juhji, J., Syarifudin, E., Supardi, S., Paiman, P., Indriana, D., Sutanto, S., Ruhiawati, I. Y., & Rahmawati, I. (2023). Exploring the Relationship Between Teacher Job Satisfaction and Professional Development in Urban Schools During a Pandemic. International Journal of Evaluation and Research in Education (Ijere), 12(4), 1755. https://doi.org/10.11591/ijere.v12i4.24510

Khajehnasiri, F., Khazarloo, L., Porsadeqiyan, M., & Dabiran, S. (2022). Burnout level in Iranian teachers and its related factors: A health promotion approach. Journal of Education and Health Promotion, 11(1), 38. https://doi.org/10.4103/jehp.jehp_444_21

Kirschning, H., Bernholt, A., Kauper, T., Möller, J., & Zimmermann, F. (2025). Navigate the start: Affective-motivational competence drives beginning teachers' instructional quality and occupational well-being. Teaching and Teacher Education, 168. https://doi.org/10.1016/j.tate.2025.105217

Li, Z., Sihes, A. J., Yao, Y., & Li, Q. (2024). The Theoretical Foundation of Curriculum Development Competencies for Kindergarten Teachers From the Perspective of Competencies, Curriculum Development, and Early Childhood Education. International Journal of Academic Research in Progressive Education and Development, 13(2). https://doi.org/10.6007/ijarped/v13-i2/21439

Mercer, S. (2023). The wellbeing of language teachers in the private sector: An ecological perspective. Language Teaching Research, 27(5), 1054–1077. https://doi.org/10.1177/1362168820973510

Narea, M., Treviño, E., Caqueo-Urízar, A., Miranda, C., & Gutiérrez-Rioseco, J. (2022). Understanding the Relationship between Preschool Teachers' Well-Being, Interaction Quality and Students' Well-Being. Child Indicators Research, 15(2), 533–551. https://doi.org/10.1007/s12187-021-09876-3

Oberg, G., MacMahon, S., & Carroll, A. (2025). Assessing the interplay: teacher efficacy, compassion fatigue, and educator well-being in Australia. Australian Educational Researcher, 52(2), 1105–1131. https://doi.org/10.1007/s13384-024-00755-8

Olčar, D., Rijavec, M., & Rogošić, S. (2023). LIFE GOALS AND BURNOUT IN CROATIAN ELEMENTARY SCHOOL TEACHERS: THE MEDIATING ROLE OF BASIC PSYCHOLOGICAL NEEDS AND FLOW AT WORK. Metodicki Ogledi, 30(2), 91–110. https://doi.org/10.21464/mo.30.2.7

Österholm, L., Widlund, A., & Korhonen, J. (2025). Engagement and burnout in the classroom – Crossover effects from teachers to students. Teaching and Teacher Education, 167. https://doi.org/10.1016/j.tate.2025.105205

Pagán-Garbín, I., Méndez, I., & Martínez-Ramón, J. P. (2024). Exploration of stress, burnout and technostress levels in teachers. Prediction of their resilience levels using an artificial neuronal network (ANN). Teaching and Teacher Education, 148. https://doi.org/10.1016/j.tate.2024.104717

Pau, K., Ahmad, A. B., Tang, H.-Y., Jusoh, A. J. B., Perveen, A., & Tat, K. K. (2022). Mental Health and Wellbeing of Secondary School Teachers in Malaysia. International Journal of Learning, Teaching and Educational Research, 21(6), 50–70. https://doi.org/10.26803/ijlter.21.6.4

Piyakun, A., & Salim, H. (2023). Teachers' worklife, mental health, and job burnout: Cases of Thailand and Indonesia. International Journal of Evaluation and Research in Education, 12(3), 1212–1221. https://doi.org/10.11591/ijere.v12i3.25077

Qin, L., Lu, J., Zhou, Y., Wijaya, T. T., Huang, Y., & Fauziddin, M. (2022). Reduction of Academic Burnout in Preservice Teachers: PLS-SEM Approach. Sustainability (Switzerland), 14(20). https://doi.org/10.3390/su142013416

Saad, S., & Ali, S. (2025). Academic resilience in medical students: exploring students' perception of social support provided by peers and teachers to help at-risk students for the successful academic journey. BMC Medical Education, 25(1). https://doi.org/10.1186/s12909-025-06858-9

Sai, B., Mohamed, B., Dergaa, I., Ceylan, H. İ., Guelmami, N., Stefanica, V., Jaraya, M., Raul Ioan, M., & Ben Abderrahman, A. (2025). Transcultural validation of the "Teacher Stress Inventory" (TSI) in Arabic: an exploratory study on stress among Tunisian teachers. Frontiers in Education, 10. https://doi.org/10.3389/feduc.2025.1513330

Salonen, N., Havu-Nuutinen, S., & Lappalainen, S. (2025). Becoming an early-years teacher–identity discourses of preservice teachers. Scandinavian Journal of Educational Research. https://doi.org/10.1080/00313831.2025.2517320

Sánchez-Pujalte, L., Navarro, D., Etchezahar, E., & Gómez Yepes, T. (2021). Teachers' burnout during covid-19 pandemic in spain: Trait emotional intelligence and socioemotional competencies. Sustainability (Switzerland), 13(13). https://doi.org/10.3390/su13137259

Tikkanen, L., Pyhältö, K., Soini, T., & Pietarinen, J. (2021). Crossover of burnout in the classroom–Is teacher exhaustion transmitted to students? International Journal of School and Educational Psychology, 9(4), 326–339. https://doi.org/10.1080/21683603.2021.1942343

Uzun, K., & Karataş, Z. (2025). Occupational burnout and life satisfaction in teachers: Mediating role of psychological mindedness. Journal of Pedagogical Research, 9(3), 116–133. https://doi.org/10.33902/JPR.202534910

Wang, H., Böke, B. N., Chan, W. Y., & Heath, N. (2025). Enhancing Coping Self-efficacy and Well-being: A Multi-context Study of an Emotion Regulation Program for Preservice Teachers. Asia-Pacific Education Researcher. https://doi.org/10.1007/s40299-024-00949-9

Xu, X., Xie, X., & Nimehchisalem, V. (2024). A Scientometric Analysis of Language Teacher Emotions (2004-2022): Spotlight on the Impact of the COVID-19 Pandemic on LTE Research. Journal of Language Teaching and Research, 15(1), 209–219. https://doi.org/10.17507/jltr.1501.23

Załuska, U., Kwiatkowska-Ciotucha, D., & Ślazyk-Sobol, M. (2020). Burnout syndrome as the example of psychological costs of work – empirical studies among human-oriented professions in Poland. IBIMA Business Review, 2020. https://doi.org/10.5171/2020.430264