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# TEACHER READINESS IN RESPONSE TO EDUCATIONAL TRANSFORMATION: A COMPREHENSIVE BIBLIOMETRIC STUDY

**Muthahharah Thahir[1], Badrud Tamam[2], Irvan Gunawan[3]**

[1]Universitas Ma'soem, West Java, Indonesia
[2]Universitas Wiralodra, West Java, Indonesia
[3]Universitas Pendidikan Indonesia, West Java, Indonesia
Email: muthahharah.thahir@gmail.com

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**Abstract:** This study presents a bibliometric analysis of the scientific literature on "Teacher Readiness in Response to Educational Transformation," using the Scopus database to examine trends, collaborations, and key research themes. The analysis reveals a significant increase in publications since 2018, with a notable peak in 2021, likely due to the impact of the COVID-19 pandemic on education systems worldwide. Central themes include teacher readiness for integrating digital technologies, STEM education, and the challenges of online teaching. The keyword co-occurrence network highlights the close connections between teacher readiness and topics such as ICT, professional development, and early childhood education. Additionally, the country collaboration network shows strong contributions from the United States, Australia, China, and Hong Kong, although global cooperation remains limited. The study also identifies the most active journals, with the Australian Journal of Teacher Education and Journal of Research on Technology in Education being prominent platforms. The findings underscore the growing need for research on teacher preparedness to address the challenges of an evolving educational landscape. Future research should focus on emerging technologies like AI and VR in education, while expanding cross-country studies to ensure a more inclusive understanding of teacher readiness across diverse contexts.

**Keywords:** Bibliometric; Education Transformation; Education Change; Teacher Readiness.

## INTRODUCTION

Education has always been a dynamic field, evolving in response to societal changes, technological advancements, and global trends (Rosário & Raimundo, 2024; Verma et al., 2024). The rapid pace of transformation in education is fueled by various factors, including shifts in pedagogical philosophies, the growing integration of technology, economic demands, and responses to global crises (Hadi et al., 2024; Hydros & Chaudhry, 2022; Wabwire, 2024, Thahir, M. et al., 2024). Among these, the COVID-19 pandemic stands out as a significant disruptor, reshaping education systems worldwide and exposing the vulnerabilities and adaptability of traditional teaching practices (Antonopoulou et al., 2021).

The pandemic underscored the critical importance of teacher readiness, as educators were thrust into unfamiliar territory with the sudden shift to remote

learning. Teachers had to quickly adopt new digital tools, manage virtual classrooms, and maintain student engagement without the benefit of face-to-face interaction (Thahir et al., 2023; Nurwidodo et al., 2023). These abrupt changes highlighted the essential role teachers play in educational continuity and transformation, demonstrating that their preparedness is not just a matter of professional competency but a cornerstone of resilient and adaptable education systems.

Teacher readiness is a multifaceted concept that encompasses professional skills, psychological adaptability, and attitudes towards change. It is critical for effectively implementing educational reforms and ensuring that systemic changes translate into improved learning outcomes for students (Elmira et al., 2018; Thahir et al., 2021; Kamahina et al., 2019). However, the pandemic revealed significant gaps in teacher preparedness, particularly in the areas of digital competency and access to adequate training and resources (Saloviita & Pakarinen, 2021; Skaalvik & Skaalvik, 2020). These challenges underscore the need for a deeper understanding of how teachers adapt to transformative shifts and what support mechanisms can enhance their readiness.

Beyond the pandemic, the broader trends of digitalization, personalized learning, and inclusive education further emphasize the necessity of teacher readiness. Innovations such as artificial intelligence and machine learning are beginning to redefine the educational landscape, requiring teachers to continuously update their skills and pedagogical approaches (Chan & Colloton, 2024; Labadze et al., 2023; Verma et al., 2024). These developments place increasing demands on teachers, who must not only master new tools but also integrate them effectively into their teaching to meet diverse student needs.

Recognizing the central role of teacher readiness in educational transformation, this study aims to provide a comprehensive bibliometric analysis of the field. By examining patterns, trends, and gaps in the literature, this research seeks to identify the key factors influencing teacher preparedness during times of significant educational change. The study's objectives include mapping the evolution of research on teacher readiness, evaluating the effectiveness of interventions and support mechanisms, and addressing the challenges educators face in adapting to reforms. In doing so, this study aims to contribute to the development of more robust and effective strategies for supporting teachers as they navigate the complexities of educational transformation.

## METHODS

This study employs a bibliometric analysis to evaluate the existing research on teacher readiness in the context of educational transformation (Ganga-Contreras et al., 2024; Kasavan et al., 2021; Yoon & Chae, 2022). The data for this study is derived from SCOPUS, a comprehensive and reputable academic database known for its wide coverage of peer-reviewed literature in various fields. SCOPUS was selected as the data source because of its extensive indexing of research publications across a wide range of disciplines, making it a reliable source for capturing a broad spectrum of studies

related to teacher readiness and educational change (Cecilia-Martín et al., 2020; Pham-Duc et al., 2022). The analysis period spans from the year 2001 to 2024, covering the entire 21st century to date, in order to capture the most recent and relevant developments in the field.

***Data Collection***

The inclusion criteria for this study focus on research articles published between 2001 and 2024. This time frame was selected to ensure that the data reflects recent trends in educational change and teacher preparedness, particularly in light of significant global events such as the COVID-19 pandemic, which has profoundly influenced educational practices worldwide. By examining literature published in the 21st century, this study aims to provide a comprehensive overview of the evolving discourse on teacher readiness within the context of rapid and ongoing educational reforms.

**Table 1**
**Inclusion and Exclusion Criteria**

| No | Inclusion | | No | Exclusion |
|---|---|---|---|---|
| 1 | Publication type | peer-reviewed journal | 1 | Non-Review Article Journal |
| 2 | Publication Year | 2001-2024 | 2 | Before 2021 |
| 3 | Language | English | 3 | Non-English Writing |

To identify relevant publications, a Boolean search strategy was used within the SCOPUS database. The search query employed was structured to target research specifically addressing teacher readiness, educational change, and related themes. The following Boolean search string was used to extract data in Scopus search field:

*(TITLE ("Teacher Readiness" OR (teacher AND ready)) AND TITLE-ABS-KEY (change OR curriculum OR policy OR transformation)*

This search query was designed to capture a wide range of studies related to teacher readiness, change, and educational transformation. The use of multiple keywords, including "Teacher Readiness," "change," "curriculum," "policy," and "transformation," ensures that the search covers various dimensions of educational reform and how they impact teachers. Additionally, the inclusion of both titles and abstracts in the search ensures a comprehensive capture of relevant studies, while the restriction to publication years after 2000 ensures that only contemporary research is included.

**Search Results and Data Processing**

The initial search in Scopus yielded a total of 129 articles. Following the application of the inclusion and exclusion criteria, a thorough screening process was conducted to ensure that only relevant and high-quality research articles were included in the final dataset. After this screening, the dataset was refined to a total of 86 articles. These 86 articles form the basis of the subsequent bibliometric analysis, offering a comprehensive and up-to-date view of the literature on teacher readiness in response to educational changes.

**Data Analysis Tools**

To conduct the bibliometric analysis, two key software tools were utilized: VOSviewer and R Studio

Biblioshiny (Abbas et al., 2022; Hamidah et al., 2020; van Eck & Waltman, 2010). Both tools offer advanced capabilities for analyzing and visualizing bibliometric data, allowing for the identification of patterns, trends, and relationships within the collected literature.

**Data Processing and Analysis**

Once the relevant publications were identified through the SCOPUS search, the data was exported into a format compatible with VOSviewer and R Studio Biblioshiny. The exported data included bibliographic information such as authorship, publication year, journal title, keywords, and citation counts. This data was then processed to clean and standardize the dataset, ensuring consistency in author names, journal titles, and keyword variations.

In the first phase of the analysis, descriptive statistics were generated to provide an overview of the publication trends in the field. This included the annual number of publications, the geographical distribution of research, and the most prominent authors, institutions, and journals contributing to the literature on teacher readiness. These descriptive insights helped contextualize the development of the field and identify any surges in research activity in response to major global events, such as the COVID-19 pandemic.

In the second phase, a co-occurrence analysis of keywords was conducted using VOSviewer. This analysis allowed for the identification of key themes and topics within the literature, as well as the relationships between different concepts. Keywords that frequently appeared together were grouped into clusters, with each cluster representing a distinct area of research focus. This analysis helped highlight the dominant themes in the field of teacher readiness, such as the impact of curriculum changes, policy reforms, and digital transformation on teachers' ability to adapt to new educational paradigms.

**RESULT**

**Descriptive Statistics**

Figure 1 bellow provides a comprehensive overview of the bibliometric analysis related to teacher readiness in the context of educational transformation. It summarizes key metrics from 86 documents published between 2006 and 2024, sourced from 74 different publications. Notably, the annual growth rate of research in this area is 11.42%, indicating a significant and steady increase in interest and publications over the years. The research is also notably collaborative, with an average of 2.98 co-authors per document and 18.6% of the documents involving international co-authorship, reflecting the global relevance of this topic.

The dataset comprises a total of 251 authors, though only 9 documents were written by single authors. This indicates a trend toward multi-author and collaborative research, perhaps due to the complexity of addressing teacher readiness and educational change in different contexts. The author's keywords (DE) reach a total of 296, reflecting the wide range of topics and themes covered by the authors in their studies. These studies collectively cite a total of 4,312 references, with an average document age of 5.05 years. This relatively young document age suggests that the field is dynamic, with

recent literature being the focus of the discourse.

The final key metric presented is the average citations per document, which stands at 13.97. This shows that the research in this area has garnered considerable academic attention and is actively contributing to the broader academic discourse on educational transformation and teacher readiness. The high level of citations demonstrates that studies within this domain are influential and provide a valuable foundation for ongoing research in the field. Overall, the bibliometric profile highlights the growing importance of understanding teacher readiness, particularly considering continuous changes in education policies and practices worldwide.

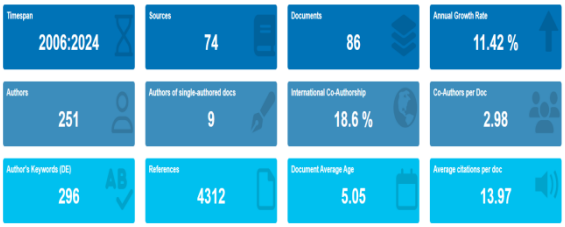


**Figure 1.**
Descriptive Statistics

## Annual Scientific Production

Figure 2 bellow provides the annual scientific production of publications related to the topic of "Teacher Readiness in Response to Educational Transformation" from 2001 to 2024, based on Scopus data. In the early period (2006–2011), the number of published documents remained consistently low, ranging from 0 to 2 per year. However, a notable increase in publications is observed from 2012 onwards, with the first peak occurring in 2013, where 7 documents were published. Subsequent years experienced fluctuations in the number of publications, with a significant spike in 2021, reaching 14 documents. The number of publications decreased in 2023 yet remained relatively high compared to earlier years.

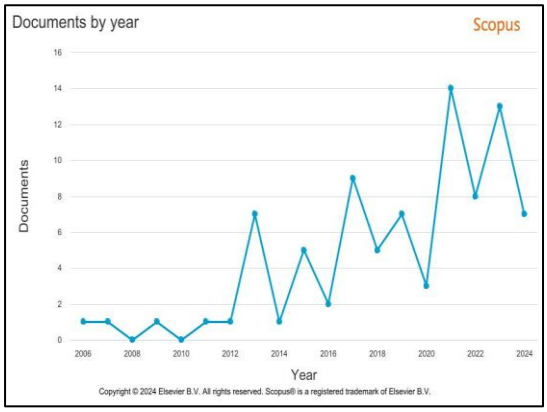


**Figure 2.**
Annual Publications

## Most Cited Article

Figure 3 bellow illustrates the number of documents related to the topic of "Teacher Readiness in Response to Educational Transformation" published by various academic institutions. The Education University of Hong Kong leads with the highest number of publications, exceeding 4 documents. It is followed by the Chinese University of Hong Kong, Arizona State University, Middle East Technical University (METU), and Aristotle University of Thessaloniki, each.

**Table 2.**
**Most Cited Article**

| No | Paper | DOI | Total Citations |
|---|---|---|---|
| 1 | LOREMAN T, 2013, AUST J TEACH EDUC | 10.14221/ajte.2013v38n1.10 | 91 |
| 2 | PETKO D, 2018, COMPUT SCH | 10.1080/07380569.2018.1428007 | 83 |
| 3 | MOHAMED Z, 2017, J EDUC TEACH | 10.1080/02607476.2016.1257509 | 59 |
| 4 | HU Z, 2011, TECHNOL PEDAGOG EDUC | 10.1080/1475939X.2011.554014 | 51 |
| 5 | PARK M, 2022, ASIA PAC J EDUC | 10.1080/02188791.2020.1815649 | 50 |
| 6 | PARKES KA, 2015, ARTS EDUC POLICY REV | 10.1080/10632913.2014.944964 | 50 |
| 7 | WAN SW-Y, 2017, TEACH THEORY PRAC | 10.1080/13540602.2016.1204289 | 47 |
| 8 | REVILLA-CUESTA V, 2021, INT J ENVIRON RES PUBLIC HEALTH | 10.3390/ijerph18042127 | 43 |
| 9 | THOMAS T, 2013, TECHTRENDS | 10.1007/s11528-013-0692-7 | 40 |
| 10 | MYSTAKIDIS S, 2021, COMPUT | 10.3390/computers10100134 | 36 |

## Most Active Institution

Figure 3 bellow illustrates the number of documents related to the topic of "Teacher Readiness in Response to Educational Transformation" published by various academic institutions. The Education University of Hong Kong leads with the highest number of publications, exceeding 4 documents. It is followed by the Chinese University of Hong Kong, Arizona State University, Middle East Technical University (METU), and Aristotle University of Thessaloniki, each contributing around 2 to 3 publications. Other institutions such as Monash University, University Technology Malaysia, Kazan Federal University, University of Nicosia, and Abai Kazakh National Pedagogical University also show similar contributions, with just over 2 documents each.

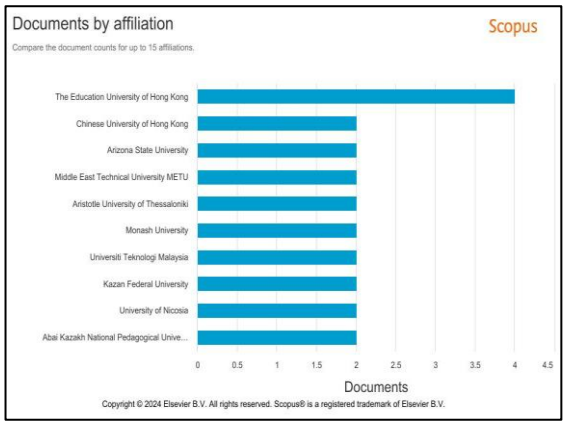


**Figure 3**
**Top 10 Most Productive Institution**

## Most Active Countries

The bar chart namely Figure 4 shows the number of documents related to "Teacher Readiness in Response to Educational Transformation" published by different countries or territories. The United States leads with the highest number of publications, contributing around 16 documents. Australia follows

with approximately 10 documents. Other significant contributors include China, Hong Kong, Indonesia, and Malaysia, each producing around 6 to 8 publications. Greece, Cyprus, the Russian Federation, and the United Kingdom also make notable contributions, with around 4 documents each.

Figure 5 shows a country collaboration network generated using VOSviewer, mapping out international partnerships in research on "Teacher Readiness in Response to Educational Transformation." The network reveals collaborative links between five countries: United States, Saudi Arabia, Australia, China, and Hong Kong. The United States is positioned centrally in the network, indicating its role as a key hub in international collaborations. The figure also highlights strong collaboration links between Hong Kong, Australia, and China, suggesting regional partnerships. The connections are represented by lines of varying thickness, indicating the strength of collaboration between countries.

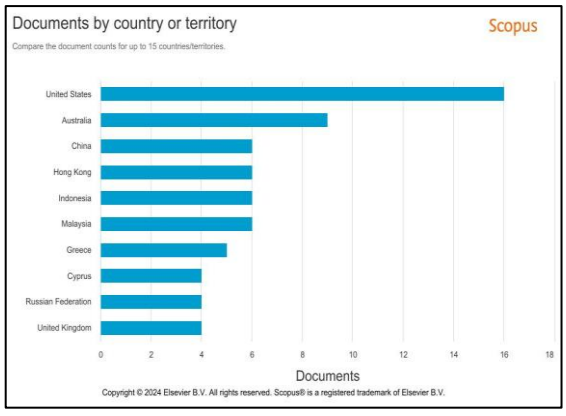


**Figure 4.**
**Top 10 Most Productive Country**

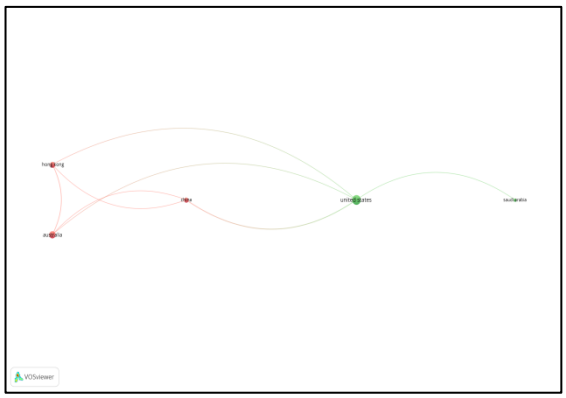

**Figure 5:**
**Country Collaboration Network**

**Most Relevant Journals**

Table 2 lists the top 10 most active journals publishing research on "Teacher Readiness in Response to Educational Transformation." The table provides information on the journal name, Scopus quartile, and the number of articles published. The Australian Journal of Teacher Education and Elementary Education Online top the list with 3 articles each, while other journals such as the Asia Pacific Journal of Education, Education Sciences, and International Journal of Learning, Teaching and Educational Research have each published 2 articles. Journals in the list are ranked between quartiles Q1 to Q3, indicating their academic standing.

**Table 3.**
**Top 10 Most Active Journal**

| No | Sources | Quartile | Articles |
|---|---|---|---|
| 1 | Australian Journal of Teacher Education | Q2 | 3 |
| 2 | Elementary Education Online | Q3 | 3 |
| 3 | Asia Pacific Journal of Education | Q2 | 2 |
| 4 | Education | Q2 | 2 |

| | | | |
|---|---|---|---|
| | Sciences | | |
| 5 | International Journal of Learning, Teaching and Educational Research | Q3 | 2 |
| 6 | Issues in Educational Research | Q2 | 2 |
| 7 | Journal of Research on Technology in Education | Q1 | 2 |
| 8 | School Leadership and Management | Q1 | 2 |
| 9 | School Science and Mathematics | Q2 | 2 |
| 10 | Sustainability (Switzerland) | Q2 | 2 |

**Most Frequent Keywords and Trend Topic Keywords**

Table 3 resents the top 10 most frequently occurring keywords in research related to "Teacher Readiness in Response to Educational Transformation." The most frequent keyword is teacher readiness, appearing 11 times, followed by teacher education with 7 occurrences. Other prominent keywords include STEM education (6 occurrences), COVID-19 (5 occurrences), and readiness (5 occurrences). Keywords such as initial teacher education, online teaching, attitudes, early childhood education, and ICT each appear between 3 and 4 times.

Figure 5 illustrates trending topics by keyword frequency over time, from 2017 to 2023. The size of each circle represents the frequency of the term, with larger circles indicating higher frequency. Teacher readiness appears as the most frequent keyword, particularly in 2023, followed by teacher education, STEM education, readiness, and COVID-19, which also shows a notable presence in 2021. The keywords appear to have gained prominence at different points in time, with some, such as teacher readiness and STEM education, remaining relevant across multiple years.

**Table 4.**
**Most Frequent Keyword**

| No | Keyword | Occurrences |
|---|---|---|
| 1 | Teacher readiness | 11 |
| 2 | Teacher education | 7 |
| 3 | Stem education | 6 |
| 4 | Covid-19 | 5 |
| 5 | Readiness | 5 |
| 6 | Initial teacher education | 4 |
| 7 | Online teaching | 4 |
| 8 | Attitudes | 3 |
| 9 | Early childhood education | 3 |
| 10 | ICT | 3 |

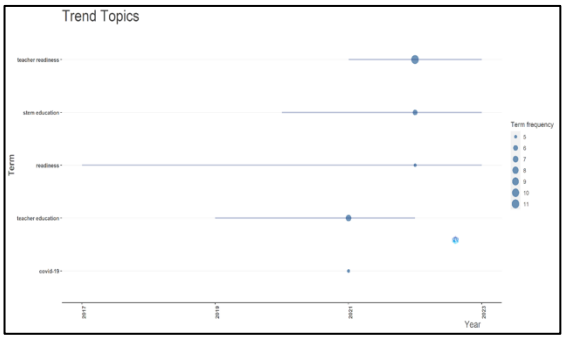


**Figure 6.**
Trend Topic Keywords

**Keyword Co-Occurrence Analysis**

Figure 5 visualizes a keyword co-occurrence network, showing the connections between keywords related to "Teacher Readiness in Response to Educational Transformation." The network consists of 9 clusters and 45 links between

different terms. The central keyword teacher readiness is prominently linked with terms like STEM education, COVID-19, online teaching, and teacher education. Other smaller clusters include terms such as professional development, digital technologies, technology integration, health protective behavior, and first aid, indicating distinct areas of focus within the broader research on teacher readiness.

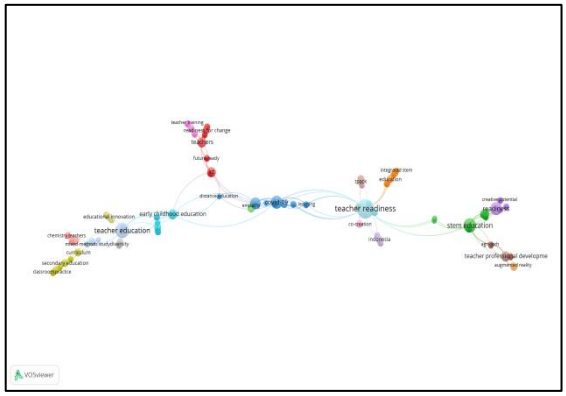


**Figure 7.**
Keyword Co-occurrence

## DISSCUSSION

The bibliometric analysis of the topic "Teacher Readiness in Response to Educational Transformation" reveals several key trends and insights into the research landscape. The data shows a significant increase in scholarly interest in this area, particularly from 2018 onward, with a notable spike in publications during the year 2021. This surge can likely be attributed to the global impact of the COVID-19 pandemic, which forced educational systems worldwide to rapidly adopt new technologies and transition to online and hybrid teaching models. The urgency of these changes highlighted the critical importance of teacher preparedness in navigating technological integration and adapting to new modes of instruction.

The analysis of keyword co-occurrence provides further insights into the central themes within this body of research. Terms such as teacher readiness (Goble et al., 2019; Mirķe et al., 2019a, 2019b), STEM education (Waters & Orange, 2022; Wieselmann et al., 2021), COVID-19 (Martin et al., 2022; Parkavi & Sugirtha, 2022), online teaching (Dunlap & Lowenthal, 2018; Mastel-Smith et al., 2015), and ICT feature prominently, indicating that the discourse on teacher readiness is closely tied to advancements in educational technology and the broader digital transformation of education. The presence of terms like early childhood education and professional development suggests that teacher preparedness is being examined across various educational levels, with a focus not only on initial teacher education but also on continuous professional development as teachers face evolving pedagogical demands (Singh et al., 2012; Tayler, 2001, Sunaengsih, C et al., 2020).

The country collaboration network underscores the global nature of research on teacher readiness, with strong contributions from the United States, Australia, China, and Hong Kong. These countries, particularly the United States, play central roles in fostering international collaborations, reflecting their leadership in educational research. However, the relatively sparse connections in the network indicate that there is still room for deeper international cooperation and knowledge exchange, particularly between developed and developing countries where teacher readiness might manifest differently due to contextual factors.

Regarding the analysis of active journals, the presence of reputable journals like the Australian Journal of Teacher Education and Journal of Research on

Technology in Education in the top ranks demonstrates that the intersection between technology and teacher readiness is gaining traction. The fact that journals from various quartiles (Q1 to Q3) are contributing to this research field indicates that while this topic is growing in prominence, it is still emerging and has room for more high-impact studies to push the discourse forward. A key observation from the analysis is the growing emphasis on STEM education and the increasing role of digital technologies in teacher preparedness (Ramli et al., 2017; Rauf et al., 2019). This shift mirrors broader trends in education, where teachers are not only expected to adapt to changes in teaching practices but also to prepare students for a future driven by science, technology, engineering, and mathematics (STEM). As a result, there is a heightened focus on equipping teachers with the necessary skills and knowledge to teach in these fields effectively.

The rise of COVID-19-related keywords, such as pandemic and distance education, reflects the immediate and transformative impact of the pandemic on education systems globally (Hoang & Hoang, 2022; Patra et al., 2021). The need for teachers to quickly adapt to remote learning environments has underscored the importance of flexibility and readiness in the teaching profession. The disruption caused by the pandemic has led to an increased focus on online teaching, further highlighting the critical role of technology in modern education. Given the findings of this bibliometric analysis, future research should focus on deepening the understanding of how teacher readiness can be enhanced in the face of ongoing technological advancements and global educational shifts. While there has been substantial work on teacher readiness related to digital technologies and STEM education, further studies should explore the specific competencies and skills teachers need to thrive in hybrid and remote learning environments. In particular, the integration of emerging technologies such as artificial intelligence (AI), virtual reality (VR), and augmented reality (AR) in classrooms remains an underexplored area. Research on how teachers can effectively incorporate these technologies into their pedagogical practices would provide valuable insights into modernizing teacher training programs. Additionally, longitudinal studies that track the development of teacher readiness over time, from pre-service education to ongoing professional development, could offer a more comprehensive understanding of how teachers evolve to meet the demands of educational transformation.

Moreover, future research should prioritize cross-country and cross-cultural studies to better capture the diverse experiences and challenges faced by teachers in different educational contexts. While countries such as the United States, Australia, and China have made significant contributions to the literature, there is a notable gap in research from developing nations where access to resources and technological infrastructure may be limited. Comparative studies that examine how teacher readiness is approached in varying economic and socio-cultural settings would not only expand the global discourse but also inform more equitable and context-sensitive policies. Finally, given the lasting impact of the COVID-19 pandemic on education systems

worldwide, future research should continue to examine how teachers adapt to ongoing disruptions, with a focus on building resilience and flexibility in their professional development to prepare for future crises.

## CONCLUSION

In conclusion, this bibliometric analysis of "Teacher Readiness in Response to Educational Transformation" highlights a growing scholarly interest in the field, driven by global shifts such as digital transformation and the COVID-19 pandemic. The data reveals an increasing trend in publications, particularly from 2018 onward, with key themes centering on the integration of digital technologies, STEM education, and the rapid adaptation required for remote teaching during the pandemic. The research is globally distributed, with the United States, Australia, and China leading in contributions, although there is still a need for more research from developing countries. The keyword co-occurrence analysis demonstrates the interconnectedness of teacher readiness with broader educational challenges, emphasizing the importance of continuous professional development and the incorporation of innovative technologies in teaching practices. Overall, the study underscores the urgency of preparing teachers for an evolving educational landscape, where technology, pedagogy, and adaptability are increasingly intertwined.

## REFERENCES

Abbas, A. F., Jusoh, A., Mas'od, A., Alsharif, A. H., & Ali, J. (2022). Bibliometrix analysis of information sharing in social media. *Cogent Business & Management*, *9*(1). https://doi.org/10.1080/23311975.2021.2016556

Adams, C. M., Adigun, O. B., & Fiegener, A. (2023). The School Principal, Teacher Burnout, and Need-Supportive Conversation. *Leadership and Policy in Schools*. https://doi.org/10.1080/15700763.2023.2289017

Antonopoulou, H., Halkiopoulos, C., Barlou, O., & Beligiannis, G. N. (2021). Transformational leadership and digital skills in higher education institutes: During the covid-19 pandemic. *Emerging Science Journal*, *5*(1), 1 – 15. https://doi.org/10.28991/esj-2021-01252

Bartsch, S., Weber, E., Büttgen, M., & Huber, A. (2020). Leadership matters in crisis-induced digital transformation: how to lead service employees effectively during the COVID-19 pandemic. *Journal of Service …*. https://doi.org/10.1108/JOSM-05-2020-0160

Cecilia-Martín, M., Rubio-González, L., Morón-Marchena, J.-A., & Cobos-Sanchiz, D. (2020). Teacher burnout: a bibliometric analysis of scientific production indexed on Scopus; [Burnout docente: un análisis bibliométrico sobre la producción científica indexada en Scopus]. *International Journal of Educational Research and Innovation*, *2020*(14), 197 – 210. https://doi.org/10.46661/ijeri.4949

Chan, C. K. Y., & Colloton, T. (2024). Generative AI in Higher Education: The ChatGPT Effect. In *Generative AI in Higher Education: The ChatGPT Effect*. Taylor and Francis. https://doi.org/10.4324/9781003459026

Dunlap, J., & Lowenthal, P. (2018). Online educators' recommendations for teaching online: Crowdsourcing in action. *Open Praxis*. https://www.learntechlib.org/p/183573/

Elmira, A., Laura, S., Tursynay, A., Zhazira, A., & Aigerim, B. (2018). Formation of the future teacher's readiness to professional activity in the dual-oriented education conditions. *Journal of Intellectual Disability - Diagnosis and Treatment*, *6*(3), 110 – 114. https://doi.org/10.6000/2292-2598.2018.06.03.7

Endot, Z., & Jamaluddin, R. (2023). Antecedent Factors Influencing Teacher's Readiness in Teaching Design and Technology Education. *Journal of Technical Education and Training*, *15*(3 Special Issue), 67 – 78. https://doi.org/10.30880/jtet.2023.15.03.007

Flores, D. D., Bocage, C., Devlin, S., & ... (2021). When community immersion becomes distance learning: Lessons learned from a disrupted semester. *Pedagogy in Health …*. https://doi.org/10.1177/2373379920963596

Ganga-Contreras, F., Suarez-Amaya, W., Alarcón-Henríquez, N., Viancos-González, P., Henríquez-Fuentes, F., & Abello-Romero, J. (2024). Scientific Production of the Relationship Between Leadership, Higher Education and Digital Transformation: A Bibliometric Analysis; [Produção Científica Sobre a Relação Entre Liderança, Ensino Superior e Transformação Digital: Uma Análise Bibliométrica]; [Producción Científica de la Relación Entre Liderazgo, Educación Superior y Transformación Digital: Un Análisis Bibliométrico]. *Interciencia*, *49*(1), 8 – 18. https://www.scopus.com/inward/record.uri?eid=2-s2.0-85184749506&partnerID=40&md5=9fd1d09de4827009639f9ecc8b2ef765

Goble, P., Sandilos, L. E., & Pianta, R. C. (2019). Gains in teacher-child interaction quality and children's school readiness skills: Does it matter where teachers start? *Journal of School Psychology*, *73*, 101–113. https://doi.org/10.1016/j.jsp.2019.03.006

Hadi, S., Purnomo, Imron, A., Pristian, R., Ranu, M. E., & Jamil, A. S. (2024). Adapted Integrated Transformational-Instructional Leadership Behaviors: Construct Validity and Perceptions among Teachers and Principals in Indonesian Vocational Schools. *Eurasian Journal of Educational Research*, *2024*(109), 238 – 259. https://doi.org/10.14689/ejer.2024.109.013

Hamidah, I., Sriyono, S., & Hudha, M. N. (2020). A Bibliometric Analysis of Covid-19 Research using VOSviewer. *Indonesian Journal of Science and Technology*, *5*(2), 209–216. https://doi.org/10.17509/ijost.v5i2.24522

Hoang, D. T. N., & Hoang, T. (2022). Ready or not? An exploration of university students' online learning readiness and intention to use during COVID-19 pandemic. *E-Learning and Digital Media*, 2147483647. https://doi.org/10.1177/20427530221117330

Hydros, A. K. M., & Chaudhry, U. B. (2022). Digital Transformation, Leadership, and Markets. *... and Other Emerging Technologies for Digital …*.

https://doi.org/10.1007/978-3-030-98225-6_8

Kamahina, R. S., Yakovenko, T. V., & Daibova, E. V. (2019). Teacher's readiness to work under the conditions of educational space digitalization. *International Journal of Higher Education*, *8*(7), 79 – 83. https://doi.org/10.5430/ijhe.v8n7p79

Karam, J. (2023). Reforming higher education through AI. In *Governance in Higher Education: Global Reform and Trends in the MENA Region*. Springer Nature. https://doi.org/10.1007/978-3-031-40586-0_12

Kasavan, S., Yusoff, S., Rahmat Fakri, M. F., & Siron, R. (2021). Plastic pollution in water ecosystems: A bibliometric analysis from 2000 to 2020. *Journal of Cleaner Production*, *313*, 127946. https://doi.org/10.1016/j.jclepro.2021.127946

Krivokapic, M. (2018). Learning after a model: the position of a teacher in practice. *Education & Self Development*, *13*(2), 19–30. https://doi.org/10.26907/esd13.2.03

Labadze, L., Grigolia, M., & Machaidze, L. (2023). Role of AI chatbots in education: systematic literature review. *International Journal of Educational Technology in Higher Education*, *20*(1). https://doi.org/10.1186/s41239-023-00426-1

Laufer, M., Leiser, A., Deacon, B., de Brichambaut, P., Fecher, B., Kobsda, C., & Hesse, F. (2021). Digital higher education: a divider or bridge builder? Leadership perspectives on edtech in a COVID-19 reality. *International Journal of Educational Technology in Higher Education*, *18*(1). https://doi.org/10.1186/s41239-021-00287-6

Lindqvist, H., Weurlander, M., Wernerson, A., & Thornberg, R. (2021). Talk of Teacher Burnout among Student Teachers. *Scandinavian Journal of Educational Research*, *65*(7), 1266 – 1278. https://doi.org/10.1080/00313831.2020.1816576

Lynch, J., Auld, G., O'Mara, J., & Cloonan, A. (2024). Teachers' everyday work-for-change: implementing curriculum policy in 'disadvantaged' schools. *Journal of Education Policy*, *39*(4), 564 – 582. https://doi.org/10.1080/02680939.2023.2245794

Marmuah, S., Poerwanti, J. I. S., Suharno, S., & ... (2022). Impact of Covid-19: A need analysis of digital literacy for elementary school teachers. *Teacher Education and …*. https://doi.org/10.1201/9781003347798-29/impact-covid-19-need-analysis-digital-literacy-elementary-school-teachers-sri-marmuah-jenny-poerwanti-suharno-suharno-diana-sinziana-duca

Martin, A., Partika, A., Castle, S., Horm, D., & ... (2022). Both sides of the screen: Predictors of parents' and teachers' depression and food insecurity during COVID-19-related distance learning. *Early Childhood …*. https://www.sciencedirect.com/science/article/pii/S0885200622000151

Mastel-Smith, B., Post, J., & Lake, P. (2015). Online teaching:"Are you there, and do you care?" *Journal of Nursing Education*. https://doi.org/10.3928/01484834-20150218-18

Mirķe, E., Cakula, S., & Tzivian, L. (2019a). Measuring Teachers-As-Learners' Digital Skills and Readiness to Study Online for Successful e-Learning Experience. *Journal of Teacher Education for*

*Sustainability*, *21*(2), 5–16. https://doi.org/10.2478/jtes-2019-0013

Mirķe, E., Cakula, S., & Tzivian, L. (2019b). MEASURING TEACHERS-AS-LEARNERS' DIGITAL SKILLS AND READINESS TO STUDY ONLINE FOR SUCCESSFUL E-LEARNING EXPERIENCE. *SOCIETY. TECHNOLOGY. SOLUTIONS. Proceedings of the International Scientific Conference*, *1*, 10. https://doi.org/10.35363/via.sts.2019.5

Nurwidodo, N., Ibrohim, I., Sueb, S., & Husamah, H. (2023). "Let's transform!": A systematic literature review of science learning in COVID-19 pandemic era. *Eurasia Journal of Mathematics, Science and Technology Education*, *19*(2). https://doi.org/10.29333/ejmste/12875

Oppi, P., Eisenschmidt, E., & Jõgi, A.-L. (2022). Teacher's readiness for leadership–a strategy for school development. *School Leadership and Management*, *42*(1), 79 – 103. https://doi.org/10.1080/13632434.2021.2016685

Parkavi, M., & Sugirtha, R. S. (2022). Student- Teacher's Digital Competency Readiness During COVID- 19. *Shanlax International Journal of Arts, Science and Humanities*, *10*(1), 103–107. https://doi.org/10.34293/sijash.v10i1.4970

Patra, S. K., Sundaray, B. K., & Mahapatra, D. M. (2021). Are university teachers ready to use and adopt e-learning system? An empirical substantiation during COVID-19 pandemic. *Quality Assurance in Education*, *29*(4), 509 – 522. https://doi.org/10.1108/QAE-12-2020-0146

Pham-Duc, B., Tran, T., Huu Hoang, D., & Bao Do, C. (2022). Global scientific literature on human resource development: a bibliometric analysis using Scopus database. *European Journal of Training and Development*. https://doi.org/10.1108/EJTD-01-2022-0004

Phillips, T. J., & Snodgrass, L. L. (2022). Who's Got the Power: Systems, Culture, and Influence in Higher Education Change Leadership. *Journal of Higher Education Policy and Leadership Studies*, *3*(2), 7 – 27. https://doi.org/10.52547/johepal.3.2.7

Pushpanadham, K., & Mammen Nambumadathil, J. (2020). Teacher as a Transformational Leader: Perspectives and Practices of Teacher Education in India. In *Teacher Education in the Global Era* (pp. 209–226). Springer Singapore. https://doi.org/10.1007/978-981-15-4008-0_13

Ramli, A. A., Ibrahim, N. H., Surif, J., Bunyamin, M. Abd. H., Jamaluddin, R., & Abdullah, N. (2017). Teachers' readiness in teaching stem education. *Man in India*, *97*(13), 343 – 350. https://www.scopus.com/inward/record.uri?eid=2-s2.0-85025432641&partnerID=40&md5=57e53ce08f4600262ca7a01a1a932bbf

Rauf, R. A. A., Sathasivam, R., & Rahim, S. S. A. (2019). Stem education in schools: Teachers' readiness to change. *Journal of Engineering Science and Technology*, *14*(Special Issue on ICEES2018), 34 – 42. https://www.scopus.com/inward/record.uri?eid=2-s2.0-85069148944&partnerID=40&md5

=d445fc6a76566c2b77ca6f1688c07edb

Rosário, A. T., & Raimundo, R. (2024). Sustainable Entrepreneurship Education: A Systematic Bibliometric Literature Review. *Sustainability (Switzerland)*, *16*(2). https://doi.org/10.3390/su16020784

Saloviita, T., & Pakarinen, E. (2021). Teacher burnout explained: Teacher-, student-, and organisation-level variables. *Teaching and Teacher Education*, *97*. https://doi.org/10.1016/j.tate.2020.103221

Singh, M., Han, J., & Woodrow, C. (2012). Shifting pedagogies through distributed leadership: Mentoring chilean early childhood educators in literacy teaching. *Australian Journal of Early Childhood*, *37*(4), 68 – 76. https://doi.org/10.1177/183693911203700410

Skaalvik, E. M., & Skaalvik, S. (2020). Teacher burnout: relations between dimensions of burnout, perceived school context, job satisfaction and motivation for teaching. A longitudinal study. *Teachers and Teaching: Theory and Practice*, *26*(7–8), 602 – 616. https://doi.org/10.1080/13540602.2021.1913404

Sunaengsih, C., Thahir, M., Tamam, B., & Safitri, B. (2020). Analysis of The Management Aspect Of Primary School Quality Improvement. Educational Administration Research and Review, 2(2).

Susilawati, D. M. (2021a). Transforming the digital leadership to improve public service performance in the COVID-19 outbreak. *Economic Annals-XXI*. https://repository.unair.ac.id/114842/

Susilawati, D. M. (2021b). Transforming the digital leadership to improve public service performance in the COVID-19 outbreak. *Economic Annals-XXI*. https://repository.unair.ac.id/114842/

Tayler, C. (2001). Australian early childhood milieu: Teacher challenges in promoting children's language and thinking. *International Journal of Phytoremediation*, *21*(1), 41–56. https://doi.org/10.1080/13502930185208671

Thah, S. S., & Latif, L. A. (2020). Learning outcomes in distance learning: a study of learners' experience. *Innovating Education in Technology-Supported …*. https://doi.org/10.1007/978-981-15-6591-5_2

Thahir, M., Komariah, A., Kurniady, D. A., Suharto, N., Kurniatun, T. C., Widiawati, W., & Nurlatifah, S. (2021). Professional development and job satisfaction on teaching performance. Linguistics and Culture Review, 5(S4), 2507-2522.

Thahir, M., Widiawati, W., & Baitillah, N. (2023). The post pandemic education: A blended learning approach for teaching and learning in higher education in new normal era. *International Journal of Ethno-Sciences and Education Research*, *3*(3), 99-108.

Thahir, M., Julius, A., Tamam, B., & Thahir, W. (2023). STUDENTS LEARNING CULTURE IN HIGHER EDUCATION AFTER THE COVID-19 PANDEMIC. Conciencia, 23(1), 75-82.

Thahir, M. (2023). Manajemen Mutu Sekolah. Indonesia Emas Group.

Thahir, M., Widiawati, M. P., & Wahyuni Thahir, S. S. (2024). Perencanaan Pendidikan: Upaya Membangun Modal Manusia Unggul. Indonesia Emas Group.

van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a

computer program for bibliometric mapping. *Scientometrics*, *84*(2), 523–538. https://doi.org/10.1007/s11192-009-0146-3

Verma, A., Dhupam, S. R., Bansod, S., & Rahul, R. (2024). Application of AI in Education. A Bibliometric Analysis. *International Journal of Religion*, *5*(8), 198 – 207. https://doi.org/10.61707/g51v1a23

Wabwire, J. (2024). The technological transformation of social science education: An overview. In *Enhancing Higher Education and Research With OpenAI Models*. IGI Global. https://doi.org/10.4018/979-8-3693-1666-5.ch007

Wan, S. W.-Y. (2017). Differentiated instruction: are Hong Kong in-service teachers ready? *Teachers and Teaching: Theory and Practice*, *23*(3), 284 – 311. https://doi.org/10.1080/13540602.2016.1204289

Waters, C. C., & Orange, A. (2022). STEM-driven school culture: Pillars of a transformative STEM approach. *Journal of Pedagogical Research*, *6*(2), 72 – 90. https://doi.org/10.33902/JPR.202213550

Wieselmann, J. R., Roehrig, G. H., Ring-Whalen, E. A., & Meagher, T. (2021). Becoming a STEM-focused school district: Administrators' roles and experiences. *Education Sciences*, *11*(12). https://doi.org/10.3390/educsci11120805

Xia, J., & Butler, S. (2023). Exploring Teacher Leadership's Effect on Teacher Burnout: Does School Rurality Make a Difference? *Asia Pacific Journal of Educators and Education*, *38*(2), 107 – 129. https://doi.org/10.21315/apjee2023.38.2.7

Yoon, S. W., & Chae, C. (2022). Research Topics and Collaboration in Human Resource Development Review 2012–2021: A Bibliometrics Approach. *Human Resource Development Review*, *21*(1), 24 – 47. https://doi.org/10.1177/15344843211068807

Zuckerman, S. J., Wilcox, K. C., Durand, F. T., Lawson, H. A., & Schiller, K. S. (2018). Drivers for Change: A Study of Distributed Leadership and Performance Adaptation During Policy Innovation Implementation. *Leadership and Policy in Schools*, *17*(4), 618 – 646. https://doi.org/10.1080/15700763.2017.1384500