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Bibliometric Analysis Using VOSviewer with Publish or Perish of Pre-service English Teachers Research

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ABSTRACT

Preparing pre-service teachers, especially English pre-service teachers, is crucial. Therefore, pre-service English teacher research needs to be carried out for researchers who will conduct research related to preparing pre-service English teachers. The purpose of this study is to analyze research trends regarding pre-service English teacher's research. Bibliometric analysis methods using VOSviewer with publish or perish were employed in this research. The data source was taken from the Google Scholar database from 2019 to 2024. The total number of documents found during the last 5 years were 500 documents. Based on the research results, it was found that the number of publications regarding pre-service English teachers' research from 2019 article data has increased to the highest amount in 2021. From a total of 97 documents in 2019 to 117 documents in 2021. Then, the article data has decreased from 2022 to 2024. From a total of 104 documents in 2022 to 18 documents in 2024. The results of the article data present three forms of visualization, namely network, overlay, and density visualization. This research concluded that the trend of research discussion is decreasing, however, it is still significant, especially in studying the trends of research data.

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1. INTRODUCTION

In the current era of rapid technological advancement, it is imperative to analyze bibliometric data that is visually displayed using mapping tools. The findings of the description and other data on the advancement of science and the accomplishment of completed research are obtained via the use of mapping tools. VOSViewer is one of the tools that may be used to do mapping for bibliometric data analysis (McAllister *et al.*, 2022).

Many previous studies used bibliometric data analysis to discover and determine research trends. Teaching and learning English-speaking skills via bibliometric analysis. The finding showed a multidimensional trend, covering, for example, communicative skills, language knowledge, and teaching and learning methods. Additionally, the studies on foreign language teaching in preschool education using a bibliometric mapping analysis. The results showed that the most used keywords were English language learning, bilingualism, English as a second language, and English learners (Yilmaz *et al.*, 2022).

Based on several previous studies, there has been no research that analyzes research trends regarding pre-service English teachers using a bibliometric analysis approach. Preparing pre-service teachers, especially English pre-service teachers, is crucial. Therefore, pre-service English teacher research needs to be carried out for researchers who will conduct research related to preparing pre-service English teachers. The purpose of this study is to analyze research trends regarding pre-service English teachers research. Bibliometric analysis methods using VOSviewer with publish or perish were employed in this research. The data source was taken from the Google Scholar database from 2019-2024. The total number of documents found during the last 5 years were 500 documents.

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2. METHOD

Bibliometric analysis was employed as a research method. There are several stages of bibliometric analysis, the first stage was collecting article data using bibliometric analysis. Next stage, published research documents related to the topic "Pre-service English Teachers" are collected.

The article data used is indexed by the Google Scholar database from 2019 - 2024. Article data is gathered using the tool Publish or Perish. 500 articles were obtained for study as a consequence of the Publish or Perish article data collection process. The data from the research articles is saved in two formats: (*.ris) for visualization and analysis using the VOSviewer tool, and (*.csv) for analysis using Microsoft Excel software.

Following data collection, article data was screened to determine whether certain components (such as year) were complete. After that, Ms. Excel was used to analyze the article data, and VOSviewer was used to visualize it. Our earlier study provides more thorough explanations of the analysis steps (Al Husaeni & Nandiyanto, 2022).

3. RESULTS AND DISCUSSION

3.1. Annual Report Research

Table 1 presents the annual report on research on "pre-service English teachers" which has been published in international journals. As a result, it was found that the total number of documents that appeared over the last 5 years is 500 documents. Moreover, details of the number of research documents regarding "pre-service English teachers" are shown as follows, in 2019, there were 97 documents. In 2020, there were 108 documents, and the highest number of documents was found in 2021 with 117 documents. In 2020, 2021, and 2022, there were 104, 56, and 18 documents, respectively. In addition, **Figure 1**, displays a graph of the decline in the number of publications regarding "pre-service English teachers" more precisely in the last 5 years.

Table 1. Annual report research on "pre-service English teachers".

Year	Documents	Percentages (%)
2019	97	19.4
2020	108	21.6
2021	117	23.4
2022	104	20.8
2023	56	11.2
2024	18	3.6
Total	500	100

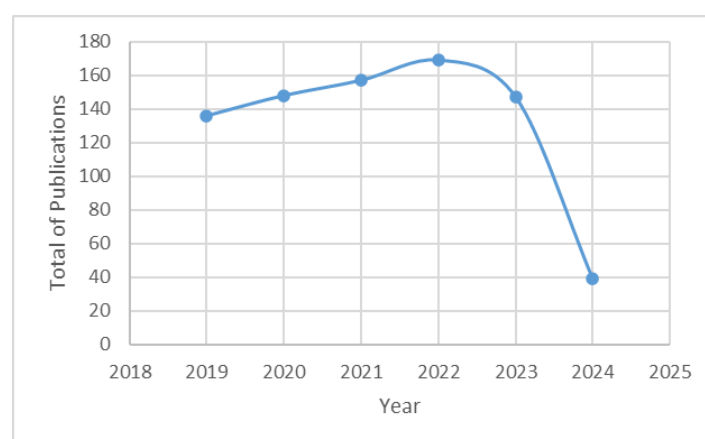


Figure 1. Annual report of publications.

3.2. Trend of English Pre-service Teachers Research Citation in 2019-2024

In this research, 20 articles regarding "pre-service English teachers" have the highest number of citations. **Table 2** shows some metadata from articles with the number of citations. As a result, it was found that the most frequently cited was the title "Pre-service teachers' strategies in improving students' speaking skills," written by [Miranda and Wahyudin \(2023\)](#) with 269 citations. Followed by the second most cited, which was the title "Assessing teacher digital competence: The construction of an instrument for measuring the knowledge of pre-service teachers," expressed by [Lázaro-Cantabrana et al. \(2019\)](#) with 254 citations. Then, the third most cited was the title "Pre-service ELT teachers' beliefs and perceptions on 21st century learning and innovation skills (4Cs)" studied by [Bedir \(2019\)](#) with 243 citations. Thus, the results also show the number of citations per year and cite per author as well.

Table 2. Difference English pre-service teacher research articles with the most citations.

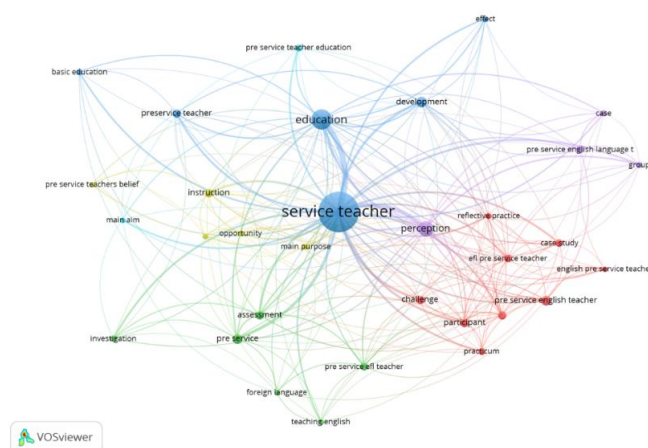
No	Cites	Titles	Year	Cites Per Year	Cites Per Author	Ref.
1.	269	Pre-service teachers' strategies in improving students' speaking skills	2023	269	135	Miranda & Wahyudin (2023)
2.	254	Assessing teacher digital competence: The construction of an instrument for measuring the knowledge of pre-service teachers	2019	50.8	85	Lázaro-Cantabrana <i>et al.</i> (2019)
3.	243	Pre-service ELT teachers' beliefs and perceptions on 21st century learning and innovation skills (4Cs)	2019	48.6	243	Bedir (2019)
4.	235	Mitigating the COVID-19 pandemic: a snapshot from Malaysia into the coping strategies for pre-service teachers' education	2020	58.75	78	Mohamad Nasri <i>et al.</i> (2020)
5.	230	Education for sustainable development (ESD): Effects of sustainability education on pre-service teachers' attitude towards sustainable development (SD)	2020	57.5	58	Nousheen <i>et al.</i> (2020)
6.	197	Evaluating pre-service kindergarten teachers' intention to adopt and use tablets into teaching practice for natural sciences	2019	39.4	99	Kalogiannakis & Papadakis (2019)
7.	154	Pre-service teachers' opinions about the use of 21st century learner and 21st century teacher skills	2019	30.8	77	Tican & Deniz (2019)
8.	121	Digital literacy practices of Turkish pre-service EFL teachers	2020	30.25	24	Akayoglu <i>et al.</i> (2020)
9.	120	Digital competence: A study from the perspective of pre-service teachers in Turkey	2020	30	60	Çebi & Reisoğlu (2020)
10.	112	Correlation between attitudes, concerns, self-efficacy and teaching intentions in inclusive education evidence from German pre-service teachers using international scales.	2019	22.4	28	Miesera <i>et al.</i> (2019)
11.	107	Pre-service teachers' generic and subject-specific lesson-planning skills: On learning adaptive teaching during initial teacher education	2020	26.75	27	König <i>et al.</i> (2020)
12.	100	Pre-service EFL teachers' readiness in computer-assisted language learning and teaching	2022	50	50	Park & Son (2022)
13.	89	Digital literacy scale of English pre-service teachers and their perceived readiness toward the application of digital technologies	2020	22.25	45	Liza & Andriyanti (2020)
14.	86	Mobile learning in pre-service teacher education: Examining the use of professional learning networks	2019	17.2	43	Kearney & Maher (2019)
15.	85	English language teacher education in Turkey: Why do we fail and what policy reforms are needed?	2019	17	43	Öztürk & Aydin (2019)
16.	82	Covid-19-triggered online learning implementation: Pre-service English teachers' beliefs	2021	27.33	82	Subekti (2021)

Table 2 (Continue). Difference English pre-service teacher research articles with the most citations.

No	Cites	Titles	Year	Cites Per Year	Cites Per Author	Ref.
17.	80	Role of gamification in classroom teaching: Pre-Service Teachers' View.	2020	20	16	Mee Mee <i>et al.</i> (2020)
18.	80	Pre-service chemistry teachers' attitudes and attributes toward the twenty-first century skills	2019	16	40	Shidiq & Yamtinah (2019)
19.	79	A technological pedagogical content knowledge (TPACK) assessment of pre-service EFL teachers learning to teach English as a foreign language	2019	15.8	26	Sarıçoban (2019)
20.	79	Self-efficacy of pre-school and primary school pre-service teachers in musical ability and music teaching	2019	15.8	79	Burak (2019)

3.3. Visualization of Research Data Mapping

Data mapped using VOSviewer generates 3 forms of visualization, namely network visualization (**Figure 2**), overlay visualization (**Figure 3**), and density visualization (**Figure 4**). The terms derived from the abstract and keywords deemed to coincide with the keywords used during data collection are grouped into 6 clusters, totalling 32 items, as demonstrated by network visualization. The link, overall link strength, and occurrences of each item vary. Based on network visualization, there are 223 total links and 1123 total link strengths overall. The following is a more detailed explanation of each cluster: i) Cluster 1 marked in red consists of 9 items, namely case study, challenge, EFL pre-service teacher, English pre-service teacher, participant, practicum, reflective practice, and teaching practicum, ii) Cluster 2 marked in green consists of 6 items, namely assessment, foreign language, investigation, pre-service, pre-service EFL teacher, and teaching English, iii) Cluster 3 marked in blue consists of 6 items, namely basic education, development, education, effect, preservice teacher, and service teacher, iv) Cluster 4 marked in yellow consists of 5 items, namely influence, instruction, main purpose, opportunity, and pre-service teachers' beliefs, v) Cluster 5 marked in purple consists of 4 items, namely case, group, perception, and pre-service English language, vi) Cluster 6 marked in light blue consists of 2 items, namely main aim and pre-service teacher education.

**Figure 2.** Network visualization.



The number of publications regarding “pre-service English teachers” during the last 5 years (2014 – 2024) was 500 documents. The development regarding “pre-service English teachers” has increased and decreased in the last 5 years. Additionally, the number of research papers on “pre-service English teachers” is displayed as follows: in 2019, there were 97 papers. There were 108 documents in 2020, and the greatest number of documents (in 2021) were discovered. There were 104, 56, and 18 documents in 2020, 2021, and 2022, respectively. In addition, when the mapping stage is completed with the VOSviewer application, the keywords are used to produce 32 items that are categorized into 6 colored clusters. The number of items in each cluster varies, as do the occurrences, links, and total connection strength of each item. It could be concluded that it is significant to find out those research trends regarding “pre-service English teachers” for future research.

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

6. REFERENCES

- Akayoglu, S., Satar, H. M., Dikilitas, K., Cirit, N. C., and Korkmazgil, S. (2020). Digital literacy practices of Turkish pre-service EFL teachers. *Australasian Journal of Educational Technology*, 36(1), 85-97.
- Al Husaeni, D. F., and Nandiyanto, A. B. D. (2022). Bibliometric using Vosviewer with Publish or Perish (using google scholar data): From step-by-step processing for users to the practical examples in the analysis of digital learning articles in pre and post Covid-19 pandemic. *ASEAN Journal of Science and Engineering*, 2(1), 19-46.
- Bedir, H. (2019). Pre-service ELT teachers' beliefs and perceptions on 21st century learning and innovation skills (4Cs). *Journal of Language and Linguistic Studies*, 15(1), 231-246.
- Burak, S. (2019). Self-efficacy of pre-school and primary school pre-service teachers in musical ability and music teaching. *International Journal of Music Education*, 37(2), 257-271.
- Çebi, A., & Reisoğlu, İ. (2020). Digital competence: A study from the perspective of pre-service teachers in Turkey. *Journal of New Approaches in Educational Research (NAER Journal)*, 9(2), 294-308.
- Kalogiannakis, M., and Papadakis, S. (2019). Evaluating pre-service kindergarten teachers' intention to adopt and use tablets into teaching practice for natural sciences. *International Journal of Mobile Learning and Organisation*, 13(1), 113-127.
- Kearney, M., and Maher, D. (2019). Mobile learning in pre-service teacher education: Examining the use of professional learning networks. *Australasian Journal of Educational Technology*, 35(1).
- König, J., Bremerich-Vos, A., Buchholtz, C., Fladung, I., and Glutsch, N. (2020). Pre-service teachers' generic and subject-specific lesson-planning skills: On learning adaptive teaching during initial teacher education. *European Journal of Teacher Education*, 43(2), 131-150.
- Lázaro-Cantabrana, J., Usart-Rodríguez, M., and Gisbert-Cervera, M. (2019). Assessing teacher digital competence: The construction of an instrument for measuring the knowledge of pre-service teachers. *Journal of New Approaches in Educational Research (NAER Journal)*, 8(1), 73-78.
- Liza, K., and Andriyanti, E. (2020). Digital literacy scale of English pre-service teachers and their perceived readiness toward the application of digital technologies. *Journal of Education and Learning (EduLearn)*, 14(1), 74-79.
- McAllister, J. T., Lennertz, L., and Atencio Mojica, Z. (2022). Mapping a discipline: A guide to using VOSviewer for bibliometric and visual analysis. *Science & Technology Libraries*, 41(3), 319-348.
- Mee Mee, R. W., Shahdan, T. S. T., Ismail, M. R., Ghani, K. A., Pek, L. S., Von, W. Y., and Rao, Y. S. (2020). Role of gamification in classroom teaching: Pre-service teachers' view. *International Journal of Evaluation and Research in Education*, 9(3), 684-690.

- Miesera, S., DeVries, J. M., Jungjohann, J., and Gebhardt, M. (2019). Correlation between attitudes, concerns, self-efficacy and teaching intentions in inclusive education evidence from German pre-service teachers using international scales. *Journal of Research in Special Educational Needs*, 19(2), 103-114.
- Miranda, J. A., and Wahyudin, A. Y. (2023). Pre-service teachers' strategies in improving students' speaking skills. *Journal of English Language Teaching and Learning*, 4(1), 40-47.
- Mohamad Nasri, N., Husnin, H., Mahmud, S. N. D., and Halim, L. (2020). Mitigating the COVID-19 pandemic: a snapshot from Malaysia into the coping strategies for pre-service teachers' education. *Journal of Education for Teaching*, 46(4), 546-553.
- Nousheen, A., Zai, S. A. Y., Waseem, M., and Khan, S. A. (2020). Education for sustainable development (ESD): Effects of sustainability education on pre-service teachers' attitude towards sustainable development (SD). *Journal of Cleaner Production*, 250, 119537.
- Öztürk, G., and Aydin, B. (2019). English language teacher education in Turkey: Why do we fail and what policy reforms are needed?. *Anadolu Journal of Educational Sciences International*, 9(1), 181-213.
- Park, M., and Son, J. B. (2022). Pre-service EFL teachers' readiness in computer-assisted language learning and teaching. *Asia Pacific Journal of Education*, 42(2), 320-334.
- Sarıçoban, A., Tosuncuoğlu, İ., and Kırmızı, Ö. (2019). A technological pedagogical content knowledge (TPACK) assessment of pre-service EFL teachers learning to teach English as a foreign language. *Journal of Language and Linguistic Studies*, 15(3), 1122-1138.
- Shidiq, A. S., and Yamtinah, S. (2019). Pre-service chemistry teachers' attitudes and attributes toward the twenty-first century skills. In *Journal of Physics: Conference Series* (Vol. 1157, No. 4, p. 042014). IOP Publishing.
- Subekti, A. S. (2021). Covid-19-triggered online learning implementation: Pre-service English teachers' beliefs. *Metathesis: Journal of English Language, Literature, and Teaching*, 4(3), 232-248.
- Tican, C., and Deniz, S. (2019). Pre-service teachers' opinions about the use of 21st century learner and 21st century teacher skills. *European Journal of Educational Research*, 8(1), 181-197.
- Yilmaz, R. M., Topu, F. B., and Takkaç Tulgar, A. (2022). An examination of the studies on foreign language teaching in pre-school education: A bibliometric mapping analysis. *Computer Assisted Language Learning*, 35(3), 270–293.