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## Research Trends on Teachers: A Bibliometric Analysis

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### ABSTRACT

This article presents a bibliometric analysis, published from 1979 to 2022, finding 490 documents about teachers. Article search is done using the Scopus database with the keyword "teacher", all articles are in English. The results of the mapping using VOSviewer and Tablau found that the development of publications fluctuated from 1979 to 2007 and increased from 2008 to 2021. Beata Pawłowska is the most prolific researcher. The journal that produces the most documents is Teaching and Teacher Education, and the most citations are also Teaching and Teacher Education, the latest journal is in demand in the Journal of Teacher Education followed by Teaching and Teacher Education. Teacher-related keywords were grouped into 4 clusters in the VOSviewer analysis with the main keyword cluster "teacher" followed by other clusters such as "professional development", "teacher professional development", "teacher education", "teacher preparation", "teacher training", "teacher retention", "teacher quality", "teacher career" and "vocational professional education and train". This proves that research on teachers discusses more of these topics.

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## 1. INTRODUCTION

Teachers are responsible for the development of student's skills and knowledge so that they arrive at those needed to improve community welfare (Chinedu et al., 2018). The process of preparing teachers is very important to create a professional identity that affects commitment (Lalitpasan et al., 2013), and the characteristics of teachers must be possessed for educational reform, namely having teaching skills, knowledge, personality, morals, and ethics, communication skills, politeness, sense of humor, honesty, fairness, and compassion (Buaraphan 2012). Professional teachers are fundamental inputs to any education system and must have appropriate content knowledge, and skills and be able to effectively communicate that content to students (Ajzenman et al., 2021; Miller & Davison, 2006). Data from the United States show that professional teachers are 85% more likely to leave their profession than teachers who are considered less professional (Kelly & Northrop, 2015) when professional TVET teachers are tempted by higher salaries in commercial enterprises. Research conducted by economists in Australia, the United States, and the United Kingdom, that increasing non-teacher income may reduce the number of professional teachers who have chosen the teaching profession (Neugebauer, 2015). Lack of prospects, inadequate legal protections, low salaries, and lack of support to teach in challenging environments can be perceived as unimportant and unvalued, therefore some studies note that this can lead to influential teacher dissatisfaction as well as with teacher professionals (Chudgar et al., 2014). This is the reason for teachers to leave the profession before retiring (Sharp & Draper, 2000). Research in Scotland 10% of teachers expressed regret about becoming a teacher due to dissatisfaction with their teacher career, then leaving the teacher because they did not see a future in teachers. The high rate of quitting teachers is an international problem and the availability of many professional teachers is considered a problem in all countries (Ladd, 2007). Some teachers lack interest at first to become teachers. A phenomenological study on African men in America found that the decision not to teach is influenced by socio-historical problems namely negative perceptions of teachers and teaching, socio-political i.e., views of schools as places to oppress where African men in America are stigmatized, labelled, and degraded, socio-cultural i.e., see teachers as a business (Graham & Erwin, 2011). Researchers found that for most college students, teachers are not the first choice. Teachers as an alternative or backup option if the choice of interest is not successfully obtained (Dastidar & Sikdar, 2015).

Empirical research on factors that influence people to consider becoming a teacher, mostly focuses on altruistic, intrinsic and extrinsic motivations (Fray & Gore, 2018). Altruistic motivation i.e., serving others, the desire to help students, contributing to society are the main reasons for teachers' explanations for their interest in the profession as teachers (Flores & Niklasson, 2014; Jungert et al., 2014). A passion for teaching and an interest in subject matter is often called intrinsic motivation. It also includes personal development, knowledge, skills and a desire to work with children or adolescents (Flores & Niklasson, 2014; Jungert et al., 2014; Reeves & Lowenhaupt, 2016). Extrinsic motivation is characterized as two separate categories. The first category relates to lifestyle choices outside of work, including the ability to balance work and family commitments, flexible working hours, and vacation. The second category relates to working conditions, including job security, good working conditions, reliable income or salary and prospects (Struyven et al., 2012; Flores & Niklasson, 2014; Jungert et al., 2014). The results of the analysis showed that various driving and pulling factors to work as a teacher were working conditions, salary, and the attractiveness of alternative jobs. The impact of motivation seems to be different in each country. In many Western countries, extrinsic motivations such as working hours and safe working conditions are not as

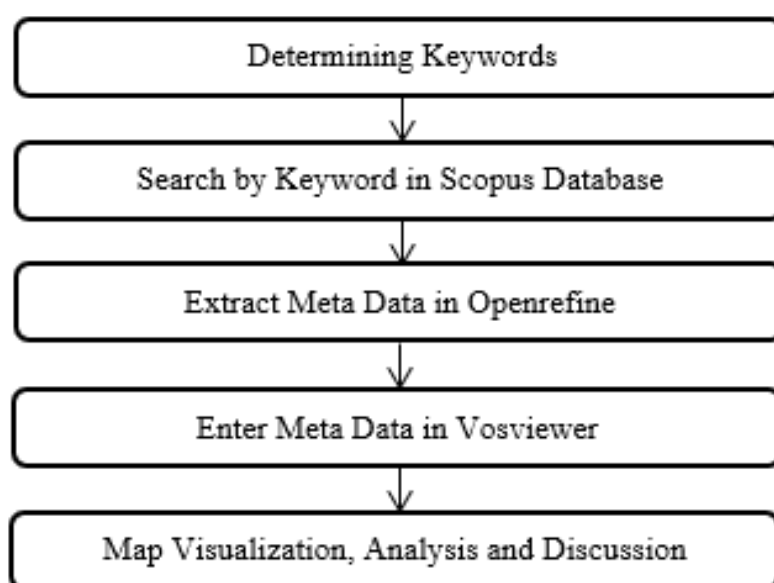
important as altruistic or intrinsic motivations for becoming teachers. Some non-Western countries' extrinsic motivation is the stronger influence, highlighting how status and salary differ. Salary conditions between Westerners and non-Westerners can affect teacher choice (Struyven *et al.*, 2012; Jungert *et al.*, 2014). In Turkey, for example, salary, additional income, promotion prospects, and working conditions greatly affect the choice of teaching profession (Yu *et al.*, 2020). In contrast, in Indonesia, the remuneration scheme (teacher certification) has no significant effect on the choice to become a teacher. The main influences on motivation to choose to become a teacher are country of residence, gender, and family role (Fray & Gore, 2018).

Bibliometrics regarding teachers is still lacking. This paper aims to systematize scientific production published from the past to the present on the topic of teachers. In this way, it offers a holistic review of the fragmented literature published to date and proposes possible future research streams. Moreover, policymakers and practitioners can find a useful basis for encouraging teacher development. Bibliometric analysis was conducted to answer the following studies:

- (i) RQ1. How does the literature progress publication in teacher research?
- (ii) RQ2. Who are the top authors by number of citations and documents?
- (iii) RQ3. Where are the country's most productive in teacher research?
- (iv) RQ4. What are the top journals that publish the most studies on teachers?
- (v) RQ5. What are the journals with the most and most recent citations?
- (vi) RQ6. What are the latest topics or future trends for research on teachers?

## 2. METHODS

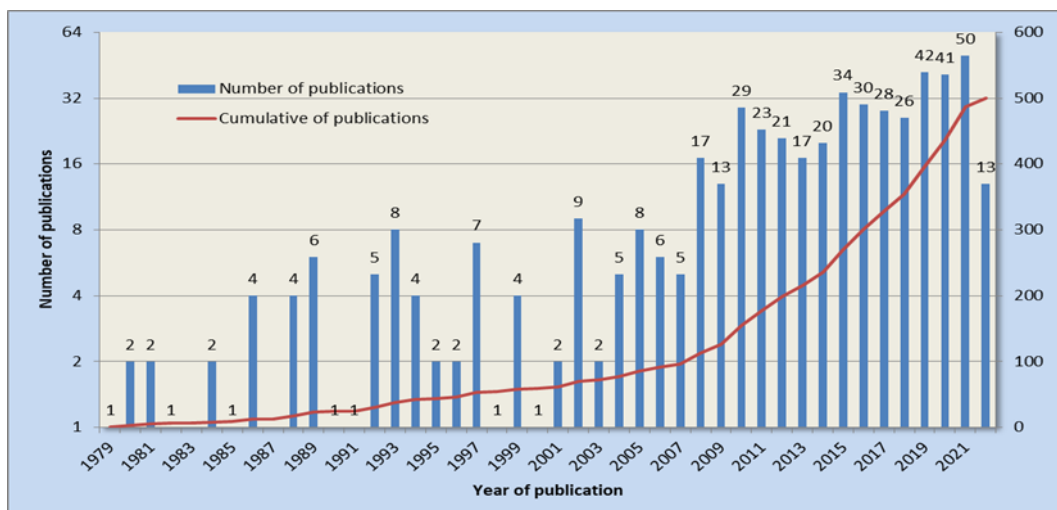
This study used bibliometrics to uncover what was known about the teacher's topic. Bibliometrics has gained increasing attention from scholars in a variety of disciplines (Addor & Melsen, 2019). The article search was carried out in the Scopus database on 9 April 2022 using the keyword "teacher". 490 documents were found in English. The data is then stored in the form of metadata which is then extracted in openrefine and then analyzed using VOSviewer, MS Excel, Tableau, and biblioshiny applications to get visualization in bibliometric maps. The stages of the research are shown in **Figure 1**.



**Figure 1.** Stages of Research (Suliyannah *et al.*, 2021).

### 3. RESULTS AND DISCUSSION

A search of metadata in the Scopus database with the keyword "teacher" found 490 documents. **Figure 2** illustrates the progress of the publication from 1979 to 2022. The analysis revealed that there was a fluctuating growth in the number of teacher publications from 1979 to 2007, but publications increased from 2008 to 2021 although there were several years of not very significant declines, and in 2021 there was an increase that reached 10.2% of the total documents, meaning that the following phenomena show an increase in researchers' interest in teacher topics from year to year. Because the 2022 data is still being updated, the number of publications is still 5.5% of the total documents, still lower than in previous years. However, it is hoped that after the update of the number of publications, in 2022 it will increase. In fact, in the last 10 years, the number of publications has grown. This shows that research on teachers is still a topic of interest to researchers.



**Figure 2.** Development of publications in teacher studies, 1979-2022.

Using VOSviewer software, metadata results from the Scopus database found that 192 authors could be calculated by researchers who were the most active in producing publications and the most cited teacher-related. Figure 3 shows the results of the VOSviewer analysis that produced the 10 most productive and most cited researchers related to teachers. As can be seen, Beata Pawłowska is the most productive researcher contributing 0.6% of documents and the most citations with 2.4%. Beata Pawłowska discussed many articles about teachers. He is a Professor of Education focusing on the field of economics and sociology. While other researchers have similarities in producing documents and citations. The other researcher also discussed teachers. A more comprehensive explanation is shown in **Figure 3**.

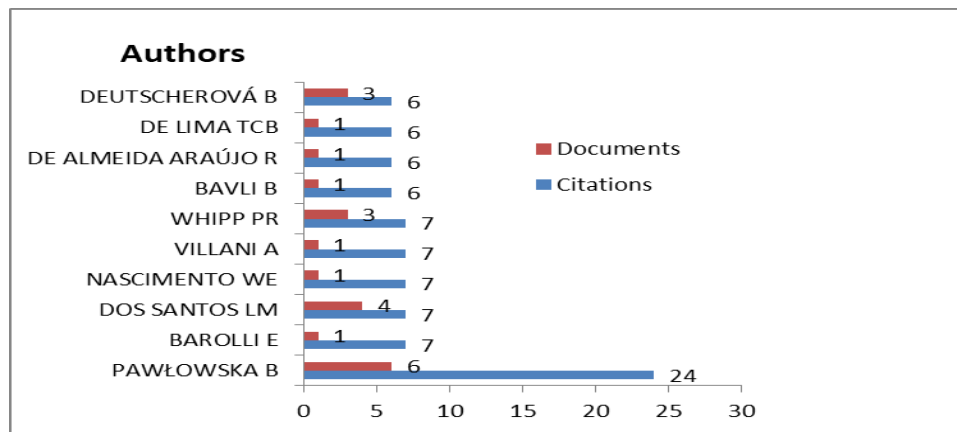


Figure 3. Distribution of top 10 authors by number of citations and documents.

Figure 4 shows the distribution of countries where teacher research is conducted, it can be observed that the most productive countries consist of the United States, United Kingdom, Netherlands, and Malaysia. The United States has been the most active in conducting studies over the past decade. United State researchers contributed 140 documents or 28.6% of the total documents analyzed. The United States government wants to create education that is relevant and has equal educational opportunities for all parties. Meanwhile, researchers from the United Kingdom contributed 62 documents with a percentage of 12.7%. In addition, the Netherlands contributed 43 documents with a percentage of 8.8%. Malaysia contributed 28 documents with a percentage of 5.7%. Malaysia is one of the most productive countries following developed countries because the Malaysian government through the Ministry of Education Malaysia has committed to making education in Malaysia a world-class education (Siraj.S & Ibrahim, 2020). Therefore, Malaysian researchers are almost on par with developed countries in teacher research. Then other countries contributed less than 20 documents.

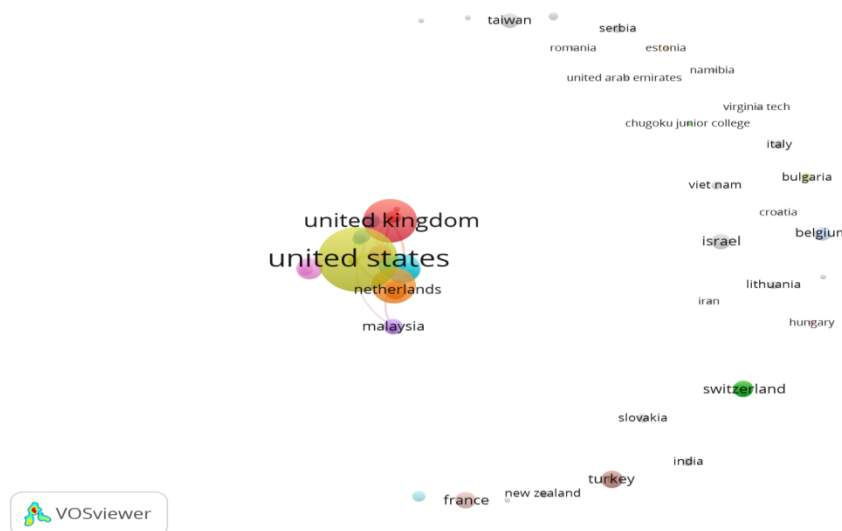
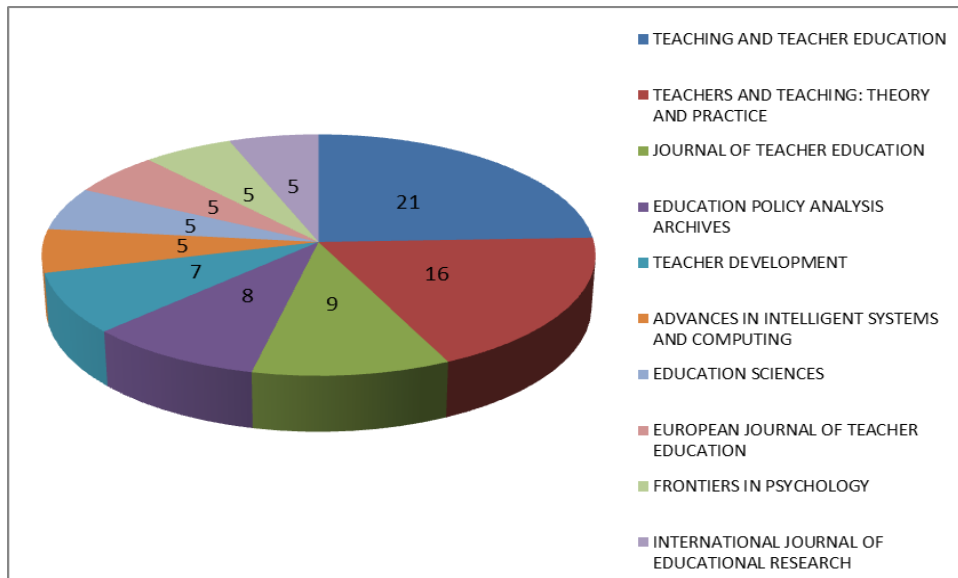


Figure 4. Network visualization of the most productive countries in teacher research.

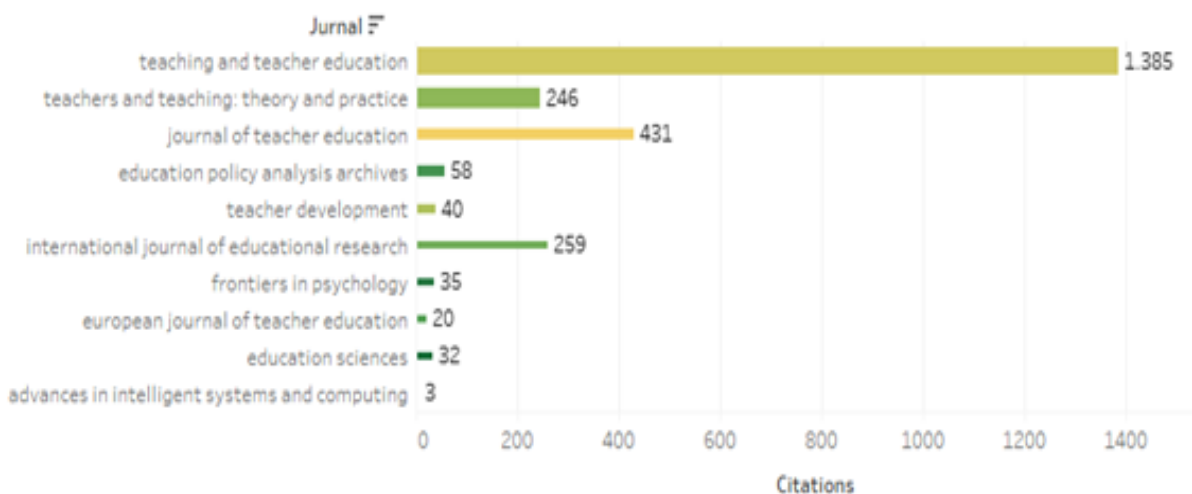
Figure 5 shows that the ten journals that produce the most documents are published. The journals that produce the most documents are Teaching and Teacher Education 6.8%, and Second Teacher and Teaching: Theory and Practice 5.2%, these two journals are grouped into the most journals out of 307 journals. Journal of Teacher Education, Education Policy Analysis,

and Teacher Development is the second largest group of journals. While other journals produce the same many documents.



**Figure 5.** TreeMap of the top 10 journals that have published the most studies on teachers.

**Figure 6** shows that out of 307 journals, the 10 journals that generate the most citations and are the latest. The journal that produced the most citations was Teaching and Teacher Education, followed by the second group of journals of Teacher Education, International Journal of Educational Research, teacher and Teaching: Theory and Practice. The third group has the least number of companies and has long-published documents consisting of education policy analysis archives, teacher development, frontiers in psychology, education sciences, the European Journal of Teacher Education, and advances in intelligent systems and computing. Meanwhile, the journal that recently published a document is the Journal of Teacher Education followed by Teaching and Teacher Education, marked in bright yellow. Judging from the width of the line, we can also analyze the journals that produce the most documents to be published. In the picture, it can still be seen that the journals that produce the most documents are teaching and teacher education then teacher and teaching: theory and practice.

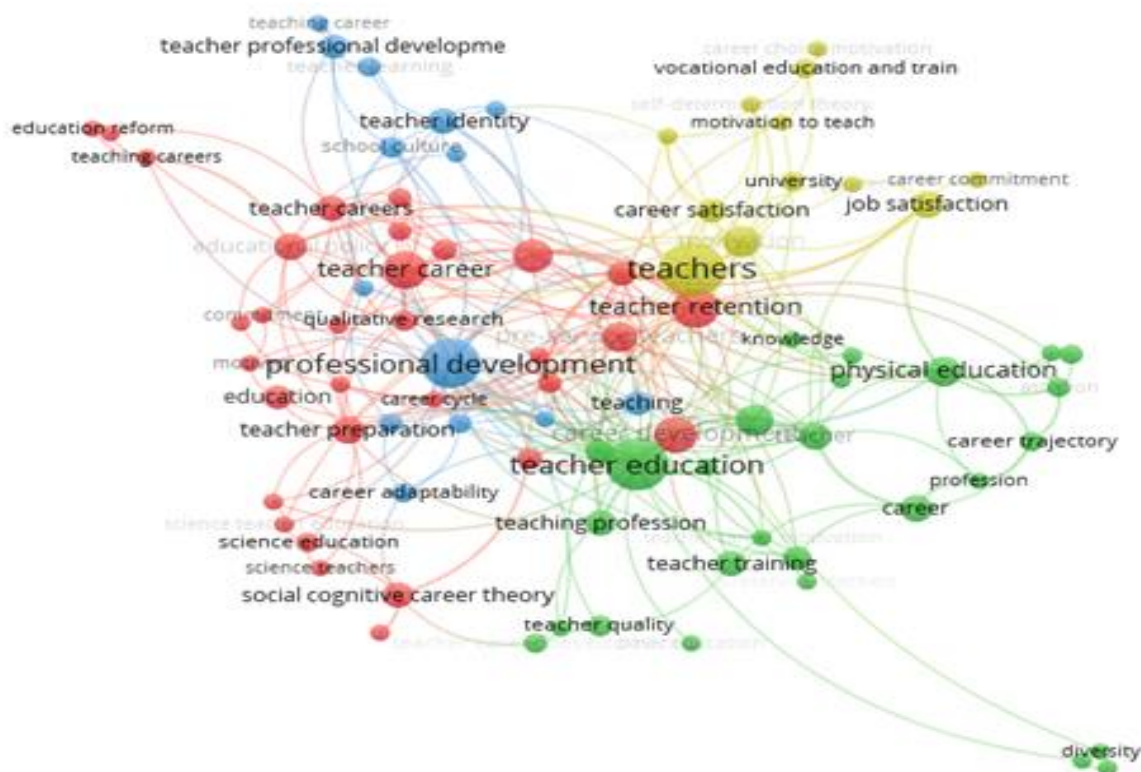


**Figure 6.** Top ten journals with the most and most recent citations.



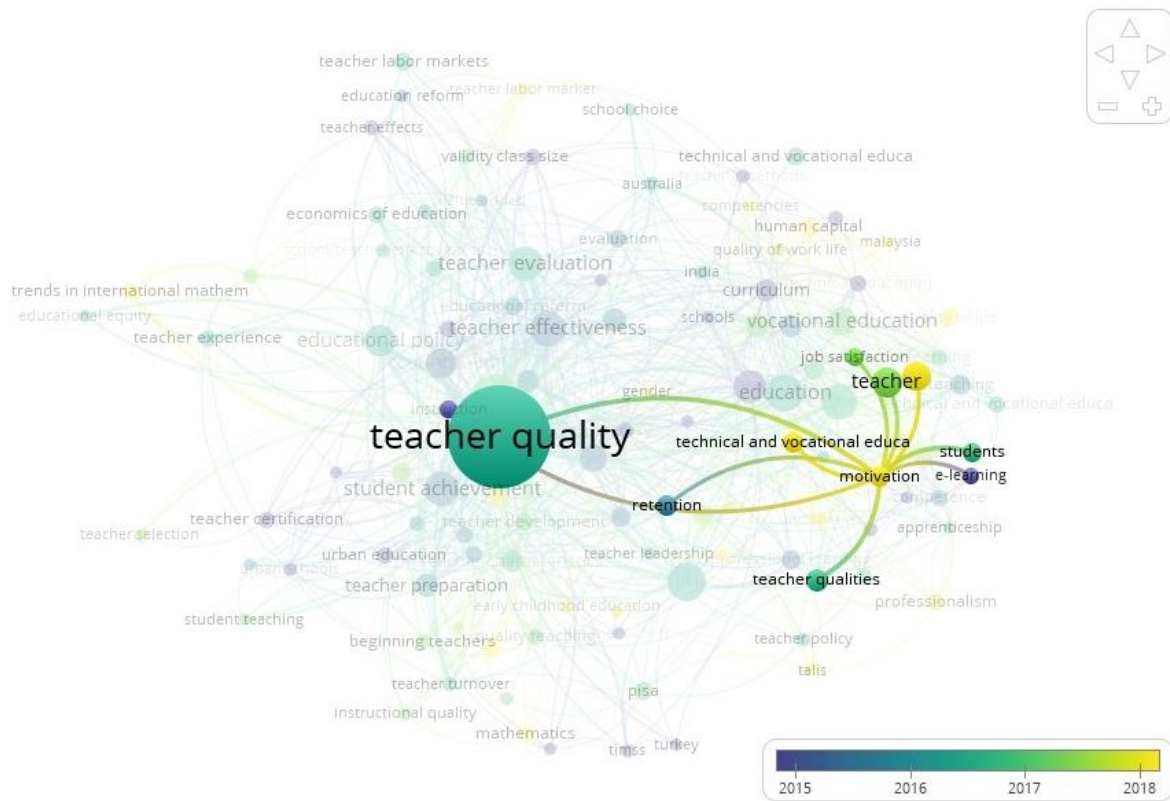
A total of 490 articles related to teachers were grouped into 4 clusters in VOSviewer analysis with the main keyword cluster "teacher" followed by other clusters such as "professional development", "teacher professional development", "teacher education", "teacher preparation", "teacher training", "teacher retention", "teacher quality", "teacher career" and "vocational education and train". This proves that the research on teachers discusses more on these topics as shown in **Figure 7**.

In the main cluster in blue, the focus of the keyword is "professional development" also represented by the keywords, teacher professional development, and teacher identity. In the green color cluster, the focus on "teacher education" is represented by keywords, teacher quality, teacher training, and teacher professional. The yellow cluster of keywords focuses on "teacher" represented by the keywords teacher, motivation to teach, career satisfaction, career commitment, job satisfaction, vocational professional education, and training. Finally, in the red cluster, the focus keyword is "teacher career", the main keywords are represented by teacher preparation, teacher retention, and career adaptability. Judging from the keywords in the cluster, it can be concluded that the keywords that are widely discussed, are about teachers, teacher professional development, teacher preparation, teacher quality, teacher training, and teacher quality.



**Figure 7.** Research Topic Cluster Using VOSviewer.

In analyzing keywords, researchers need to understand the topics in the latest research. Thus, researchers will be more comfortable identifying the main research topic. **Figure 8** shows the topic trends in recent teacher research. The yellow circle color indicates the latest topics of the current year. The teacher's topic is also connected to several other topics. In the picture, it can be seen that the latest research is on the topics of "teacher" and "technical and vocational education". Therefore, there is a need for research to discuss research on "teacher technical and vocational professional education".



**Figure 8.** Recent Research Topics Using VOSviewer.

#### 4. CONCLUSION

The results of bibliometric mapping of research with the topic "teacher" using VOSviewer in the period from 1979 to 2022 resulted in 490 related articles. Beata Pawłowska is the most prolific researcher. While other researchers have similarities in their productivity in producing articles. The journal that produced the most documents was Teaching and Teacher Education 6.8% of 307 journals, and the most citations were also Teaching and Teacher Education, the journal that recently published documents was the Journal of Teacher Education followed by Teaching and Teacher Education. A total of 490 articles related to teachers were grouped into 4 clusters in the VOSviewer analysis with the main keyword cluster "teacher" followed by other clusters such as "professional development", "teacher professional development", "teacher education", "teacher preparation", "teacher training", "teacher retention", "teacher quality", "teacher career" and "vocational education and train". This proves that research on teachers discusses more of these topics. Based on the results of the analysis of Viosviewer and the table, the research that is trending is to discuss the topic of professional development of engineering and vocational teachers. Therefore, it is necessary to discuss research on the professional development of engineering and vocational teachers. The Journal of Teaching and Teacher Education is the journal that produces the most documents, the most sitting, and also the latest to publish documents, so the researcher recommends submitting articles to the journal Teaching and Teacher Education.

#### 5. AUTHORS' NOTE

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



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