BIBLIOMETRIC ANALYSIS: ANTICIPATION OF THE TUG FALL TECHNIQUE PENCAK SILAT BASED ON VOSVIEWERS

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Abstract. Pencak silat is a martial art originating from Indonesia. It is currently developing and undergoing changes to the match rules regarding falls using pulls. The purpose of bibliometric analysis is to see the development of research trends related to the anticipation of the pencak silat tug fall technique based on the VOSviewers base. This research uses descriptive quantitative methods with a blibiometric approach. Data collection techniques by searching using the publish or perish application sourced from the Google Scholer, Scopus, Crossreff, PubMed and Web of Science databases using the keywords 'anticipation of martial arts fall' in the article title, abstract, keywords with a range of years 2019 to 2024. The map of the development of the scientific publication model of martial arts fall anticipation was analyzed using the VOSViewer application. From the search results using the Publish or Perish application, with the maximum number of searches used, namely 200 articles, there are 2 studies in accordance with the keywords entered, then by using the keywords of martial arts fall anticipation skills, the density level can be seen. Based on the results and discussion, it can be concluded that there are only two researchers who studied the anticipation of the fall technique in pencak silat. In the density appearance data, it is clear that the nodes in pencak silat are clearly visible, while the fall anticipation node are almost invisible.

Keywords: Anticipation, Falling Pull Technique, pencak silat, Vosviewers, Blibiometric Analysis.

1.   INTRODUCTION

Currently, bibliometric analysis is popular among librarianship professionals and researchers. Data obtained through bibliometric methods provide a scientific basis for researchers to make decisions. This bibliometric study is also considered very useful for curriculum analysis and for assessing the quality of research results [1]. Bibliometrics is the activity of measuring, analyzing books or other

recorded information of a scientific nature using mathematical and statistical methods [2]. The purpose of bibliometrics is to explain the process of written communication and the nature and direction of descriptive development of calculations and analysis of various research [3]. Researchers can also use bibliometric analysis to evaluate the impact of specific research outputs, such as patents, books, or conference proceedings. For example, bibliometric analysis of conference proceedings in education can reveal the most influential conferences or the most active researchers in a particular field. Similarly, bibliometric analysis of patents related to educational technology can identify key players in the field and highlight new emerging technologies or trends.

Bibliometric analysis is often known as scientometrics [4], where the use of this analysis allows researchers to explore the evolutionary nuances of a particular field and highlight emerging areas in the field [5]. Using bibliometric analysis, researchers identify publication patterns and intellectual structures in different fields or areas under study [6]. However, it is important to note that bibliometric analysis is different from a systematic literature review. Bibliometric analysis uses bibliographic and citation data to map the research that has been done in a field, while a systematic literature review involves searching and synthesizing the literature relevant to a particular topic. In bibliometric analysis, the focus is more on quantifying and measuring the influence of a study, while in a systematic literature review, the focus is more on presenting a comprehensive overview of existing research and providing a summary of key findings from relevant studies. In this case, the researcher wants to find data related to the anticipation of falling pulls in pencak silat, which in the search below uses the VOSviewers and Publish or perish applications as a tool to find data on the extent of research on this theme presented by previous researchers.

BIBLIOMETRY

Bibliometrics according to is a statistical method that can quantitatively analyze pertinent research papers on one specific topic through mathematical means [6]. Initially, the concept started as statistical bibliography and later evolved into a major field now known as bibliometric studies [4]. Bibliometric software such as Gephi, Leximancer, VOSviewer, and scientific databases such as Scopus and Web of Science. Bibliometric analysis is useful for deciphering and

mapping the cumulative scientific knowledge and evolutionary nuances of established fields by making sense of large volumes of unstructured data in a rigorous manner [7]. Therefore, a well-conducted bibliometric study can build a strong foundation for advancing a field in new, meaningful ways making it possible and empowering to: (1) obtain a comprehensive overview; (2) identify knowledge gaps; (3) acquire novelties for investigation; and (4) position intended contributions to various fields [5].

PENCAK SILAT

Pencak silat has the meaning of 'game' (skill) in self-defense with the skill of parrying, attacking, and self-defense, either with or without weapons [8].The artistic aspect of pencak silat is a form of culture in the form of rules of motion and rhythm, so that the embodiment of tactics is emphasized on harmony, balance and harmony between wiraga, wirama, and wirasa [9]. Pencak silat itself is categorized into sparring, single, double, and team categories [10]. It is allowed to knock down an opponent by pulling one of his limbs and declared valid fall value. If not with 2 hands on the body protector or shirt or arm. Pulls with 2 hands not with the same object or a combination of them with the intention of dropping or while attacking with a kick [11].

SKILLS

By doing the right movement, there will be an increase in skills as expected. Skill motion is motion that follows a certain pattern or shape that requires coordination and control of part, or all the skill motion is motion that follows a certain pattern or shape that requires coordination and control of part or all the body that can be done through the learning process, [12]. An athlete who is considered skilled often has qualities of coordination, ability, control, and efficiency of motion [13]. Learning movement skills, has different characteristics from cognitive and affective learning [14]. Singer cites Fitts and Posner's opinion that there are three stages that must be carried out by someone learning movement skills, namely: (1) cognitive stage, (2) associative stage, and (3) automation stage [15].

FALL TECHNIQUES AND ANTICIPATION

Drops are attack techniques and tactics at long and medium distances that are carried out using legs or feet to knock down opponents. A drop is a technique of knocking down an opponent as a defense due to a follow-up to a catch or direct attack technique [16].

The slam technique as an attack, together with the fall technique, has the highest value or points in pencak silat, which is value 3 [17]. Anticipation is the calculation of things that have not yet happened or mental adjustments to events that will occur. Before practicing anticipation of slams, a fighter must first know the principles of slams or falls so that in carrying out the slam anticipation model training can run well [18]. Anticipation is the calculation of things that have not yet happened or mental adjustments to events that will occur [19].

2. METHOD

This research uses the library research method. This methodology involves a thorough review of relevant literature on the topic, including books, articles, conference proceedings and other scholarly publications. The researcher started by identifying a number of keywords and search terms related to bibliometric analysis, educational research, and other related fields, both in Indonesian and in English, Bibliometric methods and educational research. These keywords were used to search online databases, such as Google Scholar, JSTOR, and ProQuest, as well as library catalogs and other resources. During the library research process, researchers also critically analyzed and evaluated relevant literature, using tools such as content analysis. The researcher used library research because it can provide diverse and rich sources for analysis and can provide a solid foundation for developing a deeper understanding of the topic. In addition, this library research is a cost-effective methodology, as it does not require primary data collection or 523 Journal on Education, Volume 03, No. 04, May-August 2021, pp. 518-537 specialized software, making it a suitable approach for researchers with limited resources or time constraints.

There are many references available that are useful for exploring this study. Some of these references include: The application of bibliometrics to research evaluation in the humanities and social sciences: Evolution of topics in education research: A systematic review using bibliometric analysis written by [20] and how to conduct a bibliometric analysis: An overview and guidelines [5]. In addition, researchers also use other references that are considered relevant to this study. These references provide a solid foundation for researchers to understand bibliometric analysis and its application in educational research. These references cover a wide range of bibliometric-related topics, including different types of bibliometric indicators, the

advantages and limitations of bibliometrics, and their practical use. In addition, they provide insights into the various approaches and methods used in bibliometric analysis, including network analysis, mapping techniques, and scientometric models.

By consulting these references, the researcher was able to gain a deeper understanding of the theoretical and practical aspects of bibliometric analysis and its role in educational research. From the researcher's perspective, the study of bibliometric analysis in educational research is very important and urgent for several reasons. First, the field of educational research is constantly evolving, and bibliometric analysis can help identify emerging trends and patterns that can form the basis for future research. Second, bibliometric analysis can provide a comprehensive overview of the literature in a particular field, highlighting the most influential scholars, journals and publications. Thirdly, the use of bibliometric analysis in educational research can help ensure that research efforts are properly focused, and resources are effectively allocated. Moreover, as the importance of evidence-based research in education continues to rise, the ability to conduct effective bibliometric analysis is increasingly important for researchers, policy makers and practitioners.

3. RESULTS AND DISCUSSION

From the search results using the Publish or Perish application, with the maximum number of searches used, namely 200 articles, there are 2 publications of articles in accordance with the keywords entered, namely the anticipation of pencak silat falls, can be seen in the image below:
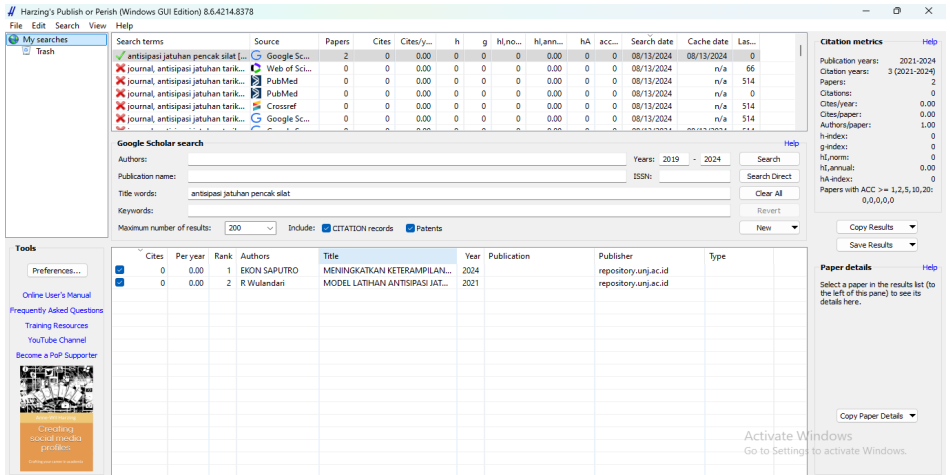
Figure 1. Display of Publish or Perish Search Results
Source: Author's Analysis

Research on the anticipation of falling techniques in the 2019-2024 period in the google scholar database can be seen in the image of the Publish or Perish search results in 2019 to 2021, no one has researched the anticipation of falling, in 2022 there was one study researched by R Wulandari, then in 2023 it did not appear and appeared again in 2024 there was one study researched by Ekon Saputra. More clearly can be seen in the visualization network image using the VOSviwer application, using keywords (pencak silat fall anticipation, pencak silat fall and pencak silat skills) on the google scholar database.
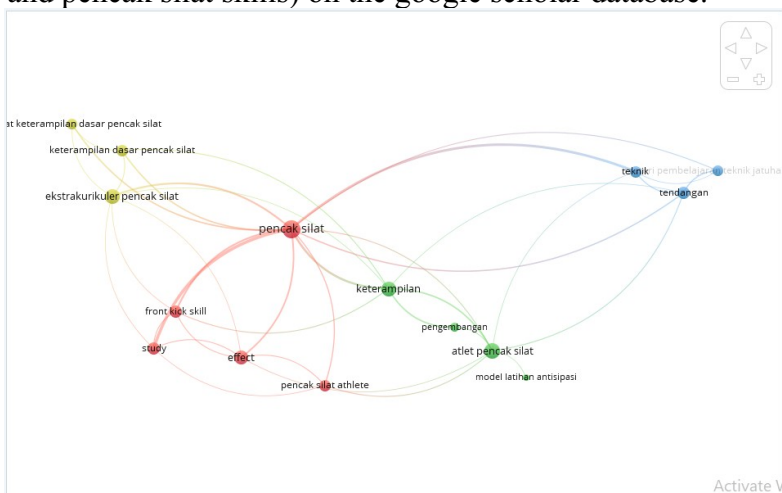
Figure 2. Network Visualization
Source: Author's Analysis

From Figure 2, it can be explained that the development of publications using the keywords anticipation, fall, pencak silat skills has 4 clusters, of which Cluster 1 has a red color with a focus on Pencak Silat, Cluster 2 has a green color with a focus on skills, Cluster 3 has a blue color with a focus on falling techniques, finally Cluster 4 which has a yellow color with a focus on basic pencak silat skills.
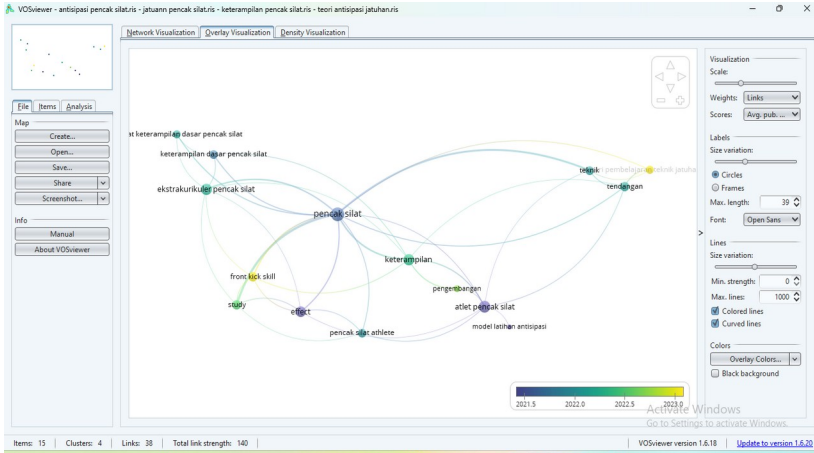

Figure 3. Overlay Visualization
Source: Author's Analysis

From this figure, it can be explained that research on the anticipation of pencak silat fall skills has a different discussion every year. In 2021, the commonly discussed research is pencak silat. Entering 2022, the research that is often discussed changes to skills, blended learning, in 2023 the research that is often discussed changes to basic techniques. At the end of 2024 the research discussed changed again to anticipation of jatuahan.

Overall, research on the anticipation of falling skills in pencak silat has the highest keyword density/use of keywords for research in the following table:

Table 1. Keyword density ranking

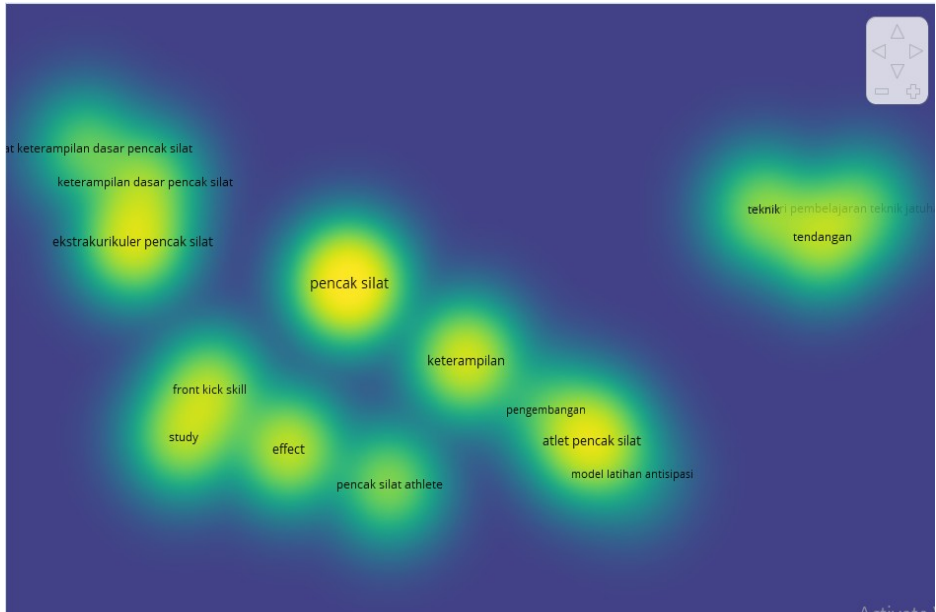| No	Keyword
1	Pencak Silat
2	Skills
3	Pencak Silat Falling Technique

The results are as follows:

Figure 4. Density Visualization
Source: Author's Analysis

Figure 3 above provides a visual representation of the keywords pencak silat, skill, pencak silat fall technique. Each node in the keyword density visualization plate has a color that depends on the density of the node item. In other words, the more vivid the color appears, the denser it is, while the color that appears vague is less dense. The color of the nodes depends on the number of objects in the node's neighborhood. Keywords that appear more frequently are in the yellow area. On the other hand, keywords that rarely appear are in the green area. In this case, pencak silat is in the yellowish green area, and the anticipation of the fall technique is almost invisible.

Present the main findings of your research. This section can be divided into subsections based on the results obtained. Discuss the results by referring to the research objectives and relevant literature. This is the section where you relate the research results to exiting theories, assess their significance, and provide new insights into the topic under study.

4. CONCLUSION

The data obtained from the explanation above shows that there are only two researchers who studied the anticipation of the fall technique in pencak silat. In the density appearance data, it is clear that the nodes in pencak silat are clearly visible while the anticipation of the fall nodes are almost invisible. It is also important to recognize that bibliometric analysis is only one method of evaluating research and should be used in conjunction with other forms of evaluation such as peer review and expert opinion. Potential follow-up studies could include comparative analysis of bibliometric indicators across different fields and longitudinal studies of bibliometric analysis to track changes in research trends and patterns over time in educational research.

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REFERENCE

[1]   K. Dwi Pratiwi Siregar, R. Ramadhaniyati, I. Muhammad, and F. Agus Triansyah, "Analisis Bibliometrik: Fokus Penelitian Critical Thinking pada Sekolah Menengah (1992-2023)," *EDUKASIA: Jurnal Pendidikan dan Pembelajaran*, vol. 4, pp. 349–360, 2023, [Online]. Available: http://jurnaledukasia.org

[2]   M. Florentina Simangunsong, I. Waspada, and I. Muhammad, "Kreativitas Guru dalam Pembelajaran di Kelas: Analisis Bibliometrik Dua Dekade Terakhir," *EDUKASIA: Jurnal Pendidikan dan Pembelajara*, vol. 4, pp. 649–660, Jun. 2023, [Online]. Available: http://jurnaledukasia.org

[3]   E. Wahyu, H. Budianto, N. Dwi, and T. Dewi, "Pemetaan Penelitian Rasio Capital Adequacy Ratio (CAR) pada Perbankan Syariah dan Konvensional: Studi Bibliometrik VOSviewer dan Literature Review," *JAFTA*, vol. 4, pp. 32–53, 2022, [Online]. Available: https://journal.maranatha.edu/index.php/jafta

[4]   H. Dervis, "Bibliometric analysis using bibliometrix an R package," *Journal of Scientometric Research*, vol. 8, no. 3, pp. 156–160, Dec. 2019, doi: 10.5530/JSCIRES.8.3.32.

[5]   N. Donthu, S. Kumar, D. Mukherjee, N. Pandey, and W. M. Lim, "How to conduct a bibliometric analysis: An overview and guidelines," *J Bus Res*, vol. 133, pp. 285–296, 2021, doi: https://doi.org/10.1016/j.jbusres.2021.04.070.

[6]   S. Büyükkıdık, "A Bibliometric Analysis: A Tutorial for the Bibliometrix Package in R Using IRT Literature," *Journal of Measurement and Evaluation in Education and Psychology*, vol. 13, no. 3, pp. 164–193, 2022, doi: 10.21031/epod.1069307.

[7]   E. Wibowo and T. Adriani Salim, "ANALISIS BIBLIOMETRIK PENELITIAN DENGAN TEMA 'DIGITAL ARCHIVE,'" *Ilmu Informasi, Perpustakaan, dan Kearsipan*, vol. 24, no. 2, pp. 93–05, Oct. 2022.

[8]   J. Candra, *Pencak Silat*. Deepublish, 2021.

[9]   P. S. Mustafa and H. F. Alatas, *Monograf: Pola Latihan Tendangan "T" bagi Atlet Pencak Silat*. Mataram: Insight Mediatama, 2023.

[10]   T. Muhtar, *Pencak Silat*. Sumedang: UPISumedangPress, 2018.

[11]   IPSI, "Peraturan Pertandingan Pencak Silat," Jakarta, 2022.

[12]   M. Widiastuti, A. A. Karim, and K. Pradityana, "Practical Self Defense Training Model Based On Submission Technique in Pencak Silat," in *Proceedings of the 2nd International Conference on Sports Sciences and Health 2018 (2nd ICSSH 2018)*, Atlantis Press, Feb. 2019, pp. 196–198. [Online]. Available: https://www.atlantis-press.com/article/55914058

[13]   I. K. Sudiana, *Keterampilan Dasar Pencak Silat*. Rajawali Pers, 2021.

[14]   B. W. P. Alfian, "MODEL PEMBELAJARAN GERAK DASAR DALAM PENCAK SILAT," UniversitasLampung, 2023.

[15]   T. Sutrisna, M. Asmawi, and R. Pelana, "Model Latihan Keterampilan Shooting Olahraga Petanque untuk Pemula," *Jurnal Segar*, vol. 7, pp. 46–53, 2018.

[16]   T. Apriyanto and H. Wardoyo, "Pengaruh Kecemasan Terhadap Keberhasilan Dan Kegagalan Teknik Jatuhan Atlet Pencak Silat Atlet Pplm Dki Jakarta Pada Kejurnas Antar Perti Unj Open 1 2018," in *Prosiding Seminar Dan Lokakarya Fakultas Ilmu Keolahragaan Universitas Negeri Jakarta*, Jakarta, 2018, pp. 129–140.

[17]   J. Lubis and H. Wardoyo, *Pencak Silat Edisi Ketiga*. Jakarta: PT Raja Grafindo Persada, 2016.

[18]   R. Wulandari, "Model Latihan Antisipasi Jatuhan Dalam Cabang Olahraga Pencak Silat pada Atlet Daerah DKI Jakarta ," UNJ, Jakarta, 2021.

[19]   E. N. Saputro, "MENINGKATKAN KETERAMPILAN ANTISIPASI JATUHAN TARIKAN MENGGUNAKAN GUNTINGAN PADA ATLET PENCAK SILAT (Study Action Research di PPLM DKI Jakarta)," UNJ, Jakarta, 2024.

[20]   C. Huang, C. Yang, S. Wang, W. Wu, J. Su, and C. Liang, "Evolution of topics in education research: a systematic review using bibliometric analysis," *Educ Rev (Birm)*, vol. 72, no. 3, pp. 281–297, May 2020, doi: 10.1080/00131911.2019.1566212.