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## ***Bibliometric analysis of jurnal SPORTIF: jurnal penelitian pembelajaran***

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### **Abstract**

Research using bibliometric analysis methods in sports journals has never been done, especially in accredited national journals. This study evaluates the pattern and development of publications in the Jurnal SPORTIF: Jurnal Penelitian Pembelajaran from 2015 to 2020. This study uses bibliometric analysis and visualization of similarities using the VOSViewer application for the graphical conception of bibliographic data such as co-occurrence of keywords and co-authorship. Also, this study will also evaluate the most productive institutions, the most productive authors, the most cited articles, the number of citations, and the level of author collaboration. The analysis results show an increase in publication production after the Jurnal SPORTIF: Jurnal Penelitian Pembelajaran was declared accredited by SINTA 2 in 2018, which shows an increase in interest in submitting articles. Forming basic movements in elementary school students through traditional games is one of the currently trending topics, so there are gaps and opportunities to exploit research with this theme. Universitas Nusantara PGRI Kediri is the most productive institution with 29 articles, while the most productive writer is Budiman Agung Pratama, with five articles published so far. Further research is expected to compare the pattern and development of publications in the SINTA 2 national accredited journals.

**Keywords:** bibliometrics, VOSViewer, author collaboration, traditional games.

### **INTRODUCTION**

Since the Minister of Research, Technology and Higher Education launched a system called the Science and Technology Index (SINTA) in 2017, the Indonesian Institute of Sciences (LIPI) has reported an increase in the publication of the International Standard of Serial Number (ISSN). In 2016 the number of ISSN publications was 8%, while in 2017 there was a significant increase of 11% and in 2018, 2019 and 2020 also experienced an increase from before 2017 with the proportion in the range of 9% ([Indonesian Institute of Sciences, 2021](#)). The increase in the issuance of

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the ISSN occurred in requests to publish scientific journals online. This is because one of the requirements to get an accredited journal is to have ISSN Online (Kemenristekdikti, 2018), therefore journal managers who already obtained a printed ISSN have begun to switch to applying for ISSN Online. By publishing journals online, it makes it easy for anyone to access published articles.

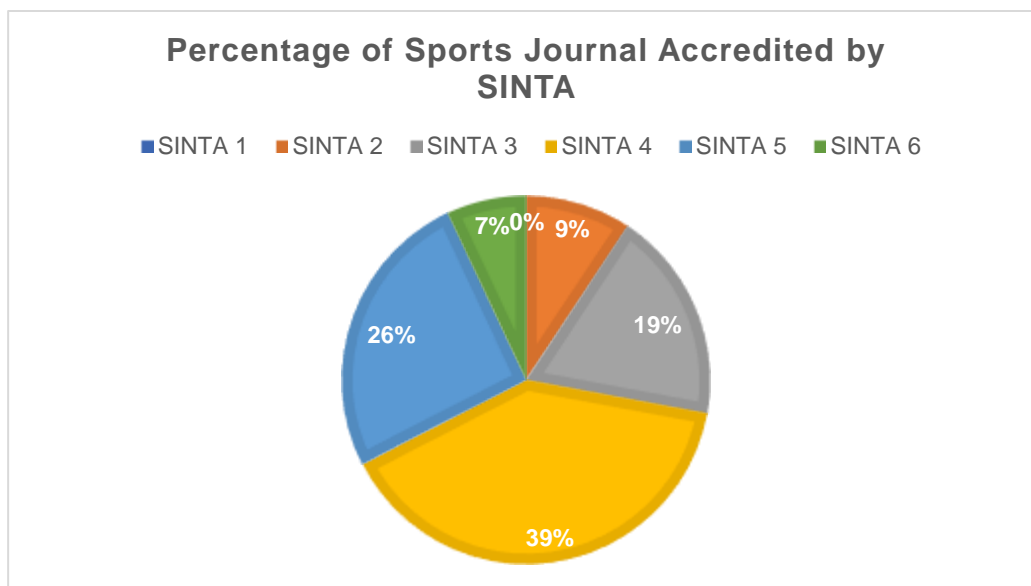
SINTA is a portal to measure the performance of researchers / lecturers / writers, journal performance, and institutional performance to create good scientific publication schemes. It is recorded that until February 14, 2021, there have been 5,531 journals accredited by SINTA (<https://sinta.ristekbrin.go.id/journals>) scattered from rank 1 to rank 6.

The increase in the appearance of these online journals is still very limited to analyze the quality of their management. Several studies have reported bibliometric analysis of a journal. [Rahayu & Idhani \(2019\)](#) reported the bibliometric analysis of Khizanah al-Hikmah journal: Journal of Library, Information and Archives Science, a journal published by Alaudin State Islamic University Makassar. The analysis carried out includes the number of articles that have been published, the writing pattern of the articles, the references used by published articles, productive writers, and productive institutions. As well as [Royani & Idhani \(2019\)](#) who also analyzed the bibliometric Journal of Marine Research in Indonesia, [Saleh & Sumarni \(2019\)](#) analyze the Journal of Standardization, and [Muhajan \(2011\)](#) who analyzed the Journal of Animal and Veterinary Science.

The researcher attempted to carry out a bibliometric analysis of the Jurnal SPORTIF: Jurnal Penelitian Pembelajaran published by Universitas Nusantara PGRI Kediri. The journal publishes articles on sports. Jurnal SPORTIF: Jurnal Penelitian Pembelajaran has ISSN online 2247-3379 and ISSN print 2548-7833. The journal was first published in 2015 and is published twice a year, but quotes from the history of the journal which can be seen at [https://ojs.unpkediri.ac.id/index.php/pjk/journal\\_history](https://ojs.unpkediri.ac.id/index.php/pjk/journal_history), the editorial team increased the publication frequency, which was originally

published every 6 months, to 4 months. The increase in the frequency of these publications started in 2020.

Quoted from the website of SINTA (<https://sinta.ristekbrin.go.id/journals>) accessed on February 14, 2021, there were 43 accredited sports journals. The data is shown in Figure 1 below.



**Figure 1.** Percentage of Sports Journal Accredited by SINTA in Indonesia

Jurnal SPORTIF: Jurnal Penelitian Pembelajaran has been accredited since 2018 in accordance with the Decree of the Director General of Research and Development Strengthening, Kemenristekdikti, Number 10 / E / KPT / 2019. According to its tracks, Jurnal SPORTIF: Jurnal Penelitian Pembelajaran is the only SINTA 2 accredited journals published by private universities and is in second place as a SINTA 2 accredited national journal after the Jurnal Keolahragaan published by Yogyakarta State University.

In the 2015-2020 period, Jurnal SPORTIF: Jurnal Penelitian Pembelajaran published dozens of articles in the field of sports, but so far there has been no report on the number of articles that have been published, the most productive writers and even the most productive institutions. Bibliometric analysis studies of journals in the field of sports have never been carried out, so this study is very important to carry out in

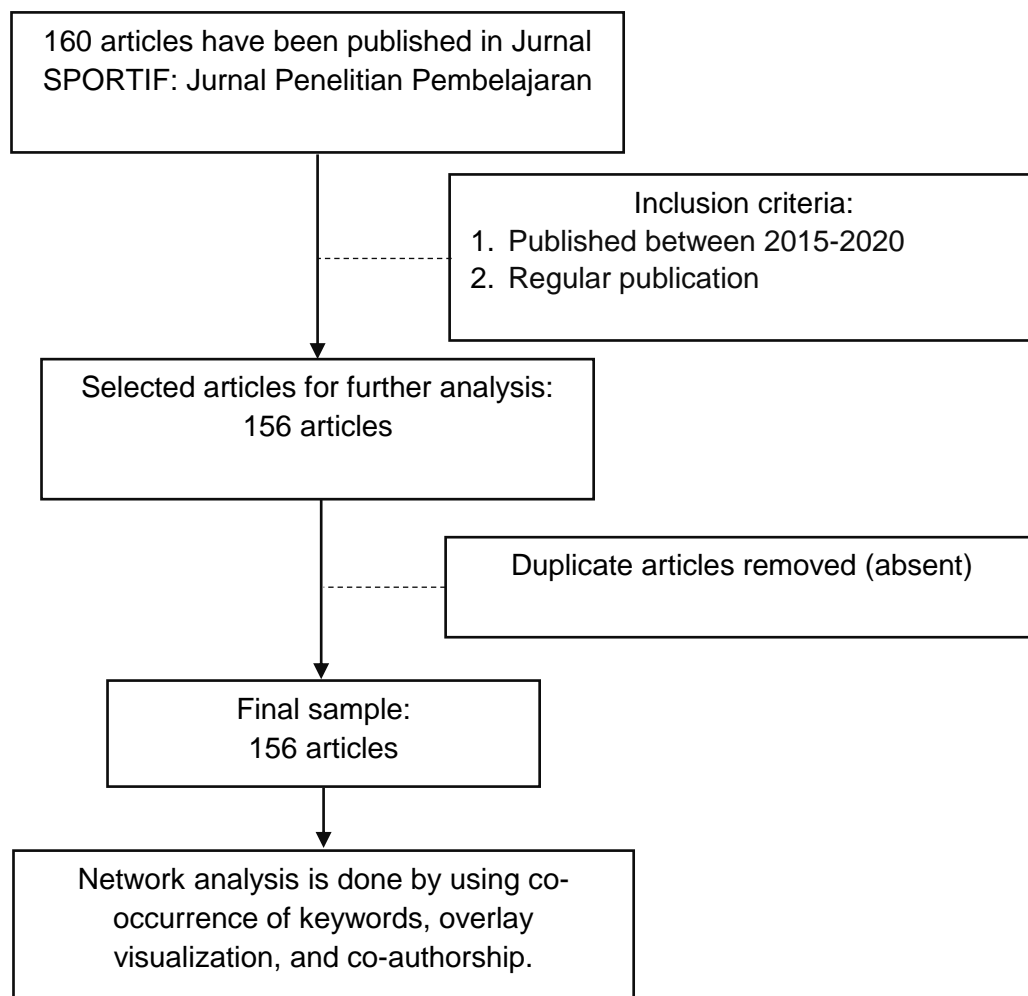
order to analyze the development of Jurnal SPORTIF: Jurnal Penelitian Pembelajaran.

In contrast to previous studies, this study in addition to analyzing the number of articles published, citation analysis, the level of collaboration, productive authors, and productive institutions, the writer also visualized co-occurrence data of keywords, the authorship network (co-authorship) with the help of the VOSViewer app. By analyzing the co-occurrence of keywords, it will be known what research themes are trending published in Jurnal SPORTIF: Jurnal Penelitian Pembelajaran. In addition, authorship network analysis also describes the author collaboration network cluster information.

The findings of this study are expected to provide initial information for evaluating a journal so that the quality of management and quality of published articles is guaranteed.

## **METHOD**

This study is a bibliometric analysis that analyzes the co-occurrence of keywords, overlay visualization, and co-authorship. The database used to analyze quantitatively comes from Jurnal SPORTIF: Jurnal Penelitian Pembelajaran page on the Archive menu with the help of the Mendeley application. The analysis structure used in this study is in line with several bibliometric studies conducted on other topics (Verma & Gustafsson, 2020). The number of articles obtained were 156 articles published from 2015 to 2020 (special editions were not involved). The document was further analyzed with VOSViewer application. The design of this research is presented in Figure 2.



**Figure 2.** Study Design

Data collection is done by tracing each publication starting from volume 1 number 1 in 2015 to volume 6 number 3 in 2020. To get metadata for all articles, the writer used the help of the Mendeley application. The writer checked the completeness of the metadata of each article on Mendeley. There were several articles whose metadata was incomplete thus the researcher had to complete it.

Bibliographic data was mapped graphically using the VOSviewer application to further explain the results (van Eck & Waltman, 2010). The software generated is a network analysis of co-authorship, and co-occurrence of keywords (Martínez-López et al., 2018).

The level of collaboration is calculated using the formula of Subramanyam (1983), namely:

$$C = \frac{N_m}{N_m + N_s}$$

Where :

C = collaboration level

N<sub>m</sub> = the total results of research conducted collaboratively

N<sub>s</sub> = the total results of research conducted individually

Notes, if:

- a. Value C = 0, it can be concluded that the results of the research were all carried out individually
- b. Value C = 0 < C < 0,5, it can be concluded that the results of research conducted individually are greater than those conducted collaboratively
- c. Value C = 0,5 then a research done individually is equal to a research conducted collaboratively
- d. Value C = 0,5 < C < 1, It can be concluded that the results of research conducted collaboratively are more numerous than those carried out individually.

## **RESULTS AND DISCUSSION**

Search results with the help of Mendeley application obtained 156 articles that have been published from 2015 to 2020.

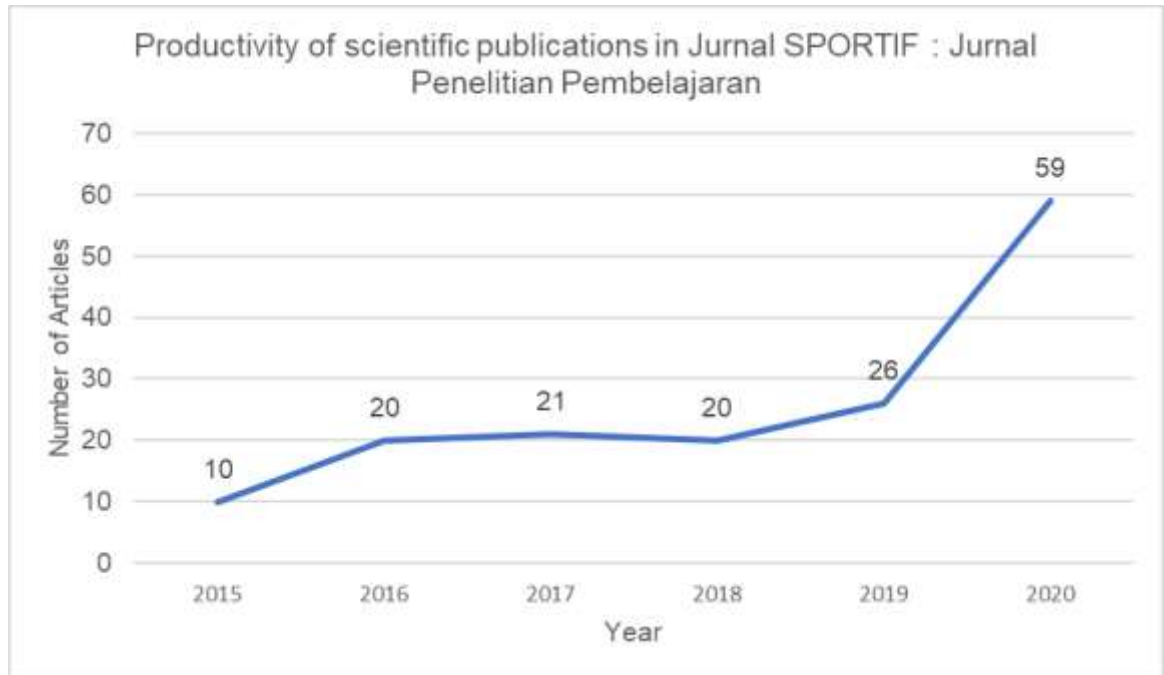
### ***Number of Publications and Citations***

Referring to Figure 3, the journal has published several documents over the past 6 years and their annual evolution is measured. Since 2015, the Jurnal SPORTIF: Jurnal Penelitian Pembelajaran has published 10 articles for the first time. This number is very small because in 2015 there was only one publication in one volume. Meanwhile, in 2016 to 2018 the number of articles published was stable in the range of 20-21. In 2016 there was an increase in the number of articles published from 20 to 26 articles. Starting in 2020 there was a sharp graph, which means an increase in the quantity of articles published. The increase in the number of articles was also due to the increase in publication frequency. The editor

has announced on the website that starting in 2020, journals will increase the publication frequency, which was originally published with a frequency of 6 months to 4 months. This means that changes in the frequency of the publication will also indirectly affect the number of articles published. It's just that the writer does not analyze the types of articles published such as conceptual articles, research articles, and the writer also described the types of articles that have been published in journals, it can be shown in Table 1.

**Table 1.** Types of articles that have been published

Types of Articles	Year						Total
	2015	2016	2017	2018	2019	2020	
Research Article	8	18	18	20	25	58	147
Conceptual Ideas Articles	2	2	3	0	0	0	7
Review Article	0	0	0	0	1	1	2
Total	10	20	21	20	26	59	156



**Figure 3.** Number of annual publications published

Table 2 shows the top 12 articles cited the most in journals. The most cited articles written by Hanief & Sugito (2015) with a traditional game theme. Meanwhile, the second most articles were written by Yuliawan (2016) with the theme of character building. The rest can be seen in Table 2 below.

**Table 2.** 12 Number of Articles Mostly Cited

Ranking	Total Citation	Article Title	Writer	Publication Year
1	58	Shaping Basic Movement in Elementary School Students through Traditional Games	Yulingga Nanda Hanief & Sugito	2015
2	31	Building the Characters of Children with a Sportive Spirit through Physical Education, Sports and Health	Dhedhy Yuliawan	2016
3	21	Effect of Three Cone Drill, Four Cone Drill, and Five Cone Drill on Agility and Speed	Rahman Diputra	2016
4	17	Survey on the Level of Physical Fitness of the Fourth Grade Students of SDN Puhrubuh I and MI Mambaul Hikam in Kediri Regency 2016/2017 Academic Year	Irma Wirnantika, Budiman Agung Pratama, & Yulingga Nanda Hanief	2017
5	16	Traditional game activities based on neuroscience learning as	Erik Burhaein	2016



character education for children with disabilities				
6	15	Development of Learning Model Jumping through Mirror Jump Game for Elementary School Students	Faizal Suharnoko, Guntur Firmansyah	2018
7	14	The Relationship between Physical Fitness and Sleep Quality	Ellen Safaringga & Reo Prasetyo Herpandika	2018
8	12	Professionalism of physical education teachers: from the leadership of school principals, school culture to teacher work motivation	Albadi Sinulingga, Suprayitno, Suprayitno, & Dian Pertiwi	2019
9	10	The Effect of Plyometric Front Cone Hops and Counter Movement Jump Exercises on Leg Muscle Power and Strength	Febrianti Zarra Pratiwi, Hari Setijono, & Yusuf Fuad	2018
10	10	Students' Perceptions of Physical Education Teacher Learning at SMA Muhammadiyah Kediri	Hendra Mashuri	2017
11	10	The Effect of Quantum Learning Model and Learning Style on Conceptual Understanding and Movement Skills in the Subjects of Physical Education, Sports and Health, High School Students in Kota Kediri	Setyo Harmono	2017
12	10	Application of the Great Values of Pencak Silat Means Forming the Morality of the Nation	Moh Nur Kholis	2016

The theme of traditional games is indeed trending because traditional games are actually not only in the curriculum in Physical Education subjects but also in other subjects such as Social Sciences (IPS) subjects (Hakim, 2017) and Mathematics Education (Siregar & Lestari, 2018) even in early childhood (Pramudyani et al., 2017). Traditional games concept are being discussed extensively and their application has been linked to basic motion by Hanief & Sugito (2015) and has been empirically proven by Gustian (2020) in developing physical literacy for elementary school students. Traditional game activities are also developed as children's character education based on neuroscience learning (Burhaein, 2017).

In addition, the writer presented a journal analysis based on the 2020 cite score. Cite score is obtained by dividing the number of citations for the last 3 years with the number of documents in the last 3 years

(James et al., 2018). The journals analyzed were journals that have been nationally accredited by SINTA 2. Currently there are 4 journals that have been nationally accredited to SINTA 2. The writer presented data on the 4 journals because only 4 journals have been nationally accredited SINTA 2 which has the highest accreditation rating today among other sports journals. Cistecore data can be seen in Table 3.

**Table 3.** Leading Journal of Sports in Indonesia.

Ranking	Journal Name	Citation Total	Document Total	Citescore year 2020
1	Jurnal Keolahragaan	561	61	9,20
2	Jurnal SPORTIF: Jurnal Penelitian Pembelajaran	440	105	4,19
3	Jurnal Pendidikan Jasmani dan Olahraga	281	98	2,87
4	<i>Journal of Sport Area</i>	148	94	1,57

Table 3 shows the citations that determine the citescore ranking and this can be seen from the formula used in determining the value, namely the number of citations divided by the number of documents. The ranking sequence also represents the SINTA 2 accredited order. Jurnal Keolahragaan started as a sports journal that was accredited by SINTA 2 for the first time in 2016. The next two years followed by the Jurnal SPORTIF: Jurnal Penelitian Pembelajaran. In 2019 it was the Jurnal Pendidikan Jasmani dan Olahraga turn and in 2020 the opportunity for the Journal of Sport Area to be nationally accredited by SINTA 2. Referring to the cite score results, it can be seen that the Jurnal Keolahragaan has the highest score than other journals and at the same time confirms its quality in terms of publishing scientific papers.

### ***Most Productive Writers and Institutions***

In this section, the most productive writers and institutions have been analyzed. A list of the most productive writers can be seen in Table 4. Budiman Agung Pratama from Universitas Nusantara PGRI Kediri is the most productive writer with 5 articles published. If we trace it back, the name Budiman Agung Pratama is also the Editor of the Jurnal SPORTIF:

Jurnal Penelitian Pembelajaran. According to the Committee on Publication Ethics, editors are allowed to publish their work in journals managed by the editor provided that it is carried out transparently, involving a review process either by blind review or open review (COPE, 2005). In its site COPE (2005) he also added that the editor publishes his work in the journal he manages because of the limited choice of journals. This means that the choice to publish in a journal that he manages is allowed provided that the record is indeed due to the limited selection of journals that are suitable for the results of his research.

Table 5 presents the most productive institutions. Universitas Nusantara PGRI Kediri is the most productive institution with a total of 29 articles. This data is of particular concern considering that the publisher of the journal is Universitas Nusantara PGRI Kediri. Diversity of affiliation or it can be called the Author Affiliation Index (AAI) is one method to measure the quality of a journal (Ferratt et al., 2007). This criterion was first conceived by Harless & Reilly (1998). The idea behind AAI is straightforward, born out of the need to be objective and practical. As a substitute for measuring the quality of the output, AAI measures the quality of the input. This assumes that the quality of a journal is determined by the quality of its articles and the quality of the articles is correlated with the quality of the institution (academic) to which the writer of the article is affiliated (Ferratt et al., 2007).

**Table 4.** 15 Most Productive Writers

Ranking	Writer	Affiliation	Total Article
1	Budiman Agung Pratama	Universitas Nusantara PGRI Kediri	5
2	Gilang Ramadan	STKIP Muhammadiyah Kuningan	4
3	Topo Suhartoyo	Universitas Jenderal Soedirman	3
4	Agi Ginanjar	STKIP Pasundan Cimahi	3
5	Agus Hariyanto	Universitas Negeri Surabaya	3
6	Kunjung Ashadi	Universitas Negeri Surabaya	3
7	Slamet Junaidi	Universitas Nusantara PGRI Kediri	3
8	Bayu Agung Parmono	Universitas Negeri Surabaya	3

9	Sugito	Universitas Nusantara PGRI Kediri	3
10	Danang Ari Santoso	Universitas PGRI Banyuwangi	3
11	Hari Setijono	Universitas Negeri Surabaya	3
12	Mokhammad Firdaus	Universitas Nusantara PGRI Kediri	3
13	Rizki Burstiando	Universitas Nusantara PGRI Kediri	3
14	Hendra Mashuri	Universitas Nusantara PGRI Kediri	3
15	I Dewa Made Aryananda Kusuma	Universitas Negeri Surabaya	3
<b>Total</b>			<b>48</b>

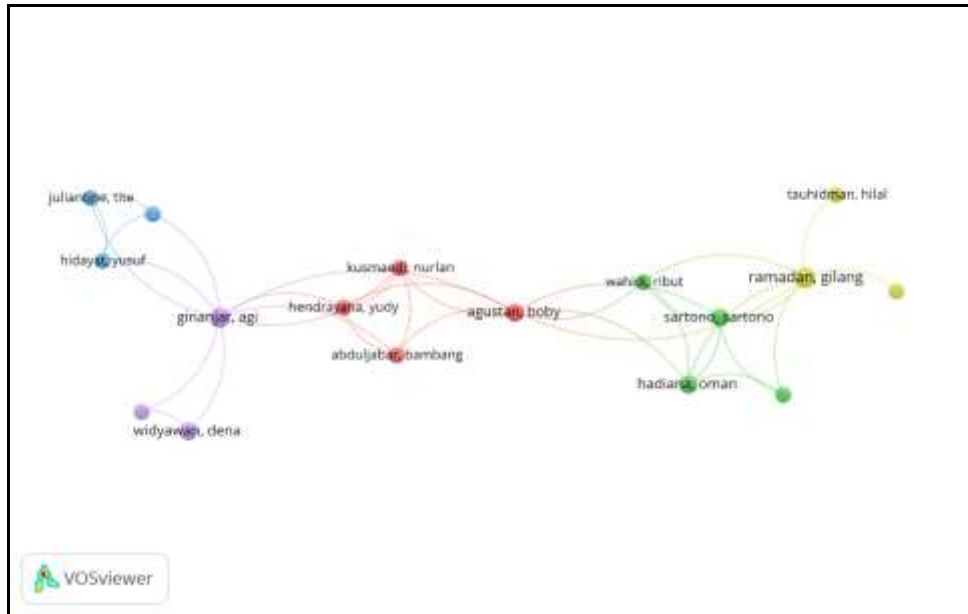
The distribution of productivity of the twelve institutions from year to year can be seen in Table 5. In 2015, 2016 and 2017, articles published were dominated by Universitas Nusantara PGRI Kediri. From 2018 to 2020, the distribution of affiliates increasingly diverse. The diversity of affiliations that emerged starting in 2018, one of which was because the journal was accredited by SINTA 2, this made the writer's interest in publishing journals got higher considering the cumulative value of articles published in SINTA 2 accredited national journals was 25 (DIKTI, 2019).

**Table 5.** 12 Most Productive Institutions

No	Institution	Total Articles
1	Universitas Nusantara PGRI Kediri	29
2	Universitas Negeri Surabaya	20
3	Universitas Negeri Yogyakarta	16
4	Universitas Pendidikan Indonesia	7
5	Universitas Jenderal Soedirman	6
6	STKIP Muhammadiyah Kuningan	5
7	IKIP Budi Utomo	5
8	STKIP Pasundan Cimahi	4
9	Universitas Sebelas Maret Surakarta	4
10	STKIP Nahdlatul Ulama Indramayu	3
11	Universitas Sriwijaya	3
12	Universitas Islam Riau	3
<b>TOTAL</b>		<b>105</b>

In this study, co-authorship analysis was also evaluated. Co-authorship analysis was used to find linkages of various studies based on articles published by the writer (Figure 4). The co-authorship network is also a tool to detect the direction of collaboration and identify researchers

and institutions that are leading research (e Fonseca et al., 2016), co-authorship network analysis helps solve problems and contribute to the development of science (e Fonseca et al., 2016).



**Figure 4. Co-authorship Analysis**

The level of collaboration in journals is also evaluated, the results of the data can be seen in Table 6 below.

**Table 6. Authorities and Collaboration Levels**

Volume/ Year	1 Writer	2 Writer	3 Writer	4 Writer	5 Writer	More than 5 writers	Collaboration Level
1/2015	6	4	-	-	-	-	0,4
2/2016	18	2	-	-	-	-	0,1
3/2017	13	3	4	1			0,4
4/2018	6	6	7	1			0,7
5/2019	4	11	8	3			0,8
6/2020	10	11	16	10	10	2	0,8
<b>Total</b>	<b>57</b>	<b>37</b>	<b>35</b>	<b>15</b>	<b>10</b>	<b>2</b>	<b>0,6</b>
<b>Percentage (%)</b>	<b>36,54</b>	<b>23,71</b>	<b>22,44</b>	<b>9,62</b>	<b>6,41</b>	<b>1,28</b>	

Based on Table 6, refers to the formula of Subramanyam (1983) it can be concluded that the research was conducted collaboratively from 2018 to 2020 (C value > 0.5), whereas before 2018 the research was conducted individually (C value < 0.5). If traced further, this change in the level of collaboration is indirectly influenced by the acquisition of SINTA 2 national accreditation. DIKTI (2019) that the national journal accredited SINTA 2 has the highest credit score of 25. With these guidelines, the

writers, who are mostly lecturers, also have high interest in publishing their research results in SINTA 2 accredited national journals. Furthermore, referring to SNI/STANDAR that Learning Outcomes of Graduates (CPL) Masters Program must publish articles in a SINTA 1 or SINTA 2 accredited national journal. The writer's interest is very relevant to the number of articles published starting in 2019 with the addition of 6 articles from the number of publications in 2020 which were only 20 articles. A significant increase occurred in 2020 with the number of articles published as many as 59 articles (Figure 3).

**Table 7.** Number of Articles Published from 12 Most Productive Institutions

No	Institution	Year					
		2015	2016	2017	2018	2019	2020
1	Universitas Nusantara PGRI Kediri	10	5	7	2	1	4
2	Universitas Negeri Surabaya	0	0	2	6	6	6
3	Universitas Negeri Yogyakarta	0	0	1	0	3	9
4	Universitas Pendidikan Indonesia	0	0	0	0	2	5
5	Universitas Jenderal Soedirman	0	0	0	0	1	5
6	STKIP Muhammadiyah Kuningan	0	0	0	1	1	3
7	IKIP Budi Utomo	0	0	0	3	1	1
8	STKIP Pasundan Cimahi	0	0	1	0	1	2
9	Universitas Sebelas Maret Surakarta	0	0	0	2	0	2
10	STKIP Nahdlatul Ulama Indramayu	0	0	0	0	0	3
11	Universitas Sriwijaya	0	0	0	0	1	2
12	Universitas Islam Riau	0	0	0	1	2	0

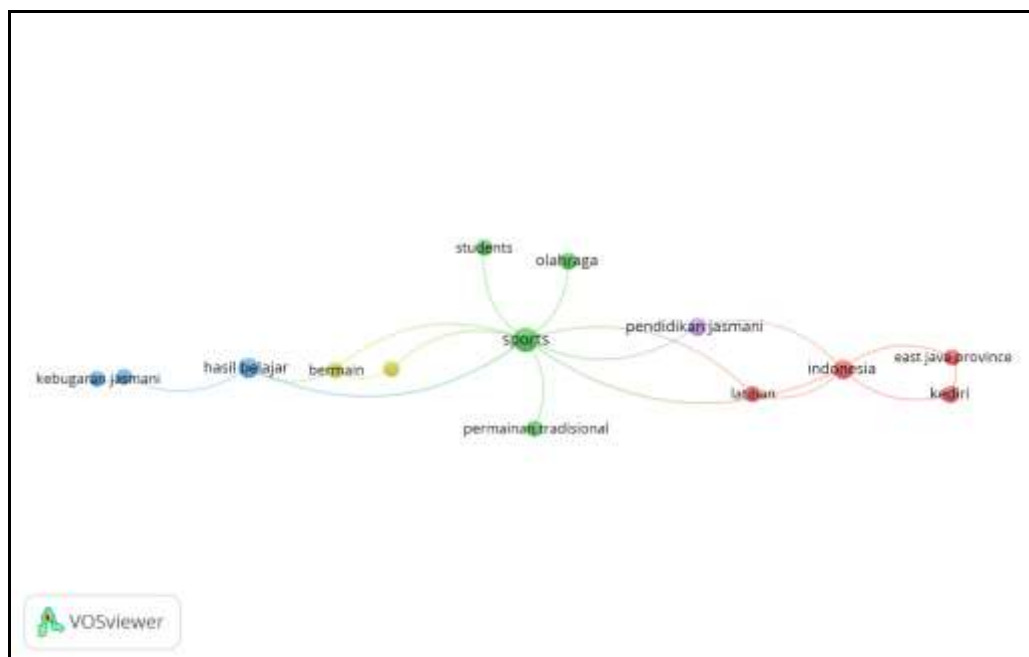
### **Co-occurrence of Key words**

The co-occurrence of keywords published in a journal is evaluated to indicate the frequency with which the words are arranged in the article (Gaviria-Marin et al., 2018). By using the VOSViewer application, the data is analyzed using the co-occurrence analysis type of keywords, with the full counting method, the minimum number of co-occurrences of the keyword set 2 is obtained 19 keywords. From 19 keywords then excluded based on the suitability of keywords with sports and journals in order to

obtain 14 relevant keywords. The co-occurrence data of keywords is shown in Table 8, while the visualization is shown in Figure 5.

**Table 8** Co-Occurrence from the Key Words

No	Key words	Co-Occurrence	Total Link Strength
1	Sports	14	27
2	Learning outcomes	6	8
3	Indonesia	5	18
4	Physical education	4	5
5	Kediri	3	12
6	Sports	3	2
7	East java province	2	12
8	Learning	2	5
9	Play	2	4
10	Practice	2	3
11	Traditional game	2	2
12	Soccer	2	2
13	Physical fitness	2	1
14	Students	2	1



**Figure 5.** Network Visualization of Co-occurrence of keywords

Based on Table 8, it can be seen that the keyword "sports" appears most often 14 times. Meanwhile, the total link strength attribute shows the total link strength of the authorship with a particular researcher with other researchers.

The co-occurrence results of keywords shown in Table 8 showed the suitability between purpose and scope (aim and scope) of Jurnal SPORTIF: Jurnal Penelitian Pembelajaran. Table 8 further confirms the trend of research topics according to the objectives, objectives and scope of the journals with the most influential keywords found being "sports", "learning outcomes", "Indonesia", and physical education".

The keyword "sports" is the most common keyword and has even become the most connected for the last 6 years (the highest total link strength value). This topic is not only important for the Jurnal SPORTIF: Jurnal Penelitian Pembelajaran, but is a growing research trend as shown by research conducted by [Hastie et al. \(2011\)](#) which seeks to identify research trends on sports education from 2004 until the article was published in Physical Education & Sport Pedagogy in 2011.

"Sports" being the 14 most common influential keywords in Jurnal SPORTIF: Jurnal Penelitian Pembelajaran in the last 6 years, the logical reason behind this is because the term "sports" is a central topic related to almost all research on sports.

The visualization of the co-occurrence network of keywords also forms clusters that are trending themes in Jurnal SPORTIF: Jurnal Penelitian Pembelajaran for the past 6 years. The theme groups are shown in Table 9 below.

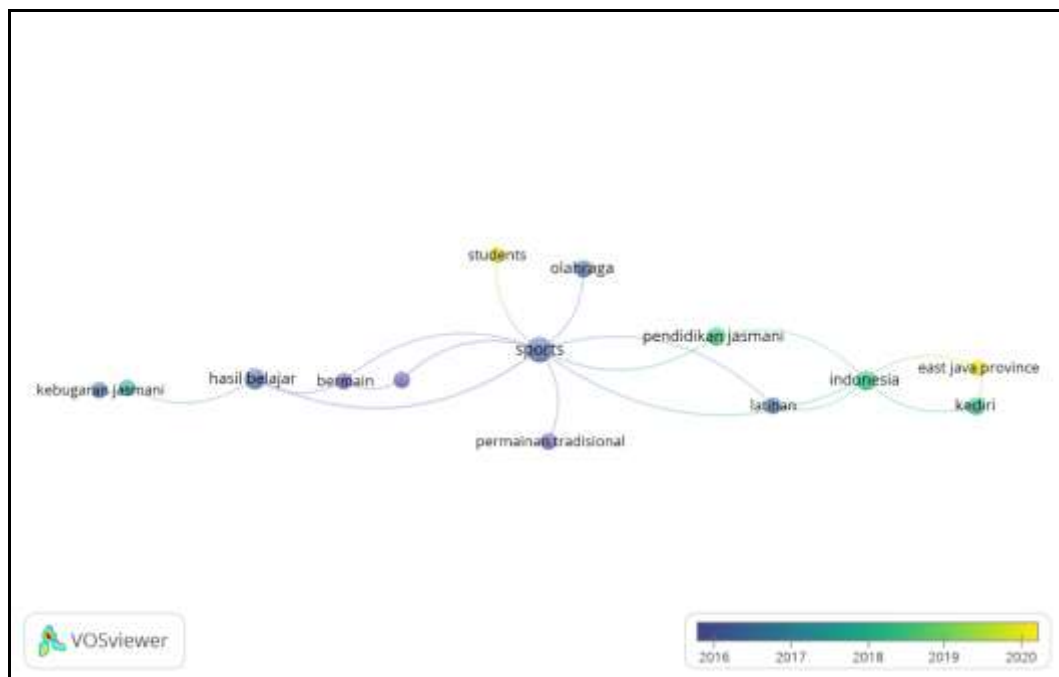
**Table 9.** High Frequency keyword cluster

Number/ Color of Cluster	Number of Keywords that Appear	Keywords ( <i>occurrences</i> )
Cluster 1 / Red	4	East java province (2); Indonesia (5); Kediri (3); dan latihan (2)
Cluster 2 / Green	4	Olahraga (3); permainan tradisional (2); Sports (14); dan students (2)
Cluster 3 / Blue	3	Hasil belajar (6); kebugaran jasmani (2); dan sepakbola (2)
Cluster 4 / Yellow	2	Bermain (2) dan pembelajaran (2)
Cluster 5 / Purple	1	Pendidikan jasmani (4)

The keyword clusters in Table 9 in detail explain the research trends in the journal. In the first group, there are several keywords which, when translated, can mean trending research in the area of East Java



Province, East Java Province, especially in the City of Kediri, with the sub-theme of “training”. The second group with the emerging keywords were sports, traditional games, and students. This is in line with one of the scope of the journal, namely traditional games. The traditional game research theme received a large portion therefore it became a trending theme. Cluster three appears the keywords learning outcomes, physical fitness, and football. This means that the research theme of these keywords is the third trending theme. Group four appeared the keywords play and learning, and group five appeared the keywords of physical education. In general, the research theme that is trending is around physical education learning. This trend is very much in accordance with the scope of the journal; thus, it confirms that the articles published are within the scope of the journal.



**Figure 6.** *Overlay Visualization* from co-occurrence of Keywords

VOSViewer also presents an overlay of visualization of current discussion trends with yellow net in Figure 6 which shows the discussion of east java province, students, physical education, Indonesia and Kediri,

which are keywords that appear in 2019 to 2020. This means that there is an opportunity and a need for further research on that topic.

## CONCLUSION

Jurnal SPORTIF: Jurnal Penelitian Pembelajaran has published 6 volumes since 2015 with a total of 156 articles (without special editions). The findings show that the most productive author is Budiman Agung Pratama, the most productive institution is Universitas Nusantara PGRI Kediri, the level of group collaboration began in the 2018 publication, and the trending theme according to cited data is traditional games and according to the cluster of co-occurrence keyword is physical education learning.

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