

TAN, Qinyi, WANG, Meijie, TENG, Luyan & HE, Fang. Raising interest in master of physical education during the COVID-19 pandemic: An analysis of Baidu Index data. *Quality in Sport*. 2022;8(1):70-75. eISSN 2450-3118. DOI <http://dx.doi.org/10.12775/QS.2022.08.01.006> <https://apcz.umk.pl/QS/article/view/41066>

The journal has had 20 points in Ministry of Education and Science of Poland parametric evaluation. Annex to the announcement of the Minister of Education and Science of December 21, 2021. No. 32582.

Has a Journal's Unique Identifier: 201398. Scientific disciplines assigned: Economics and finance (Field of social sciences); Management and Quality Sciences (Field of social sciences).

Punkty Ministerialne z 2019 - aktualny rok 20 punktów. Załącznik do komunikatu Ministra Edukacji i Nauki z dnia 21 grudnia 2021 r. Lp. 32582. Posiada Unikatowy Identyfikator Czasopisma: 201398.

Przypisane dyscypliny naukowe: Ekonomia i finanse (Dziedzina nauk społecznych); Nauki o zarządzaniu i jakości (Dziedzina nauk społecznych).

© The Authors 2022;

This article is published with open access at Licensee Open Journal Systems of Nicolaus Copernicus University in Torun, Poland

Open Access. This article is distributed under the terms of the Creative Commons Attribution Noncommercial License which permits any noncommercial use, distribution, and reproduction in any medium, provided the original author (s) and source are credited. This is an open access article licensed under the terms of the Creative Commons Attribution Non commercial license Share alike.

(<http://creativecommons.org/licenses/by-nc-sa/4.0/>) which permits unrestricted, non commercial use, distribution and reproduction in any medium, provided the work is properly cited.

The authors declare that there is no conflict of interests regarding the publication of this paper.

Received: 04.11.2022. Revised: 19.11.2022. Accepted: 07.12.2022.

Raising interest in master of physical education during the COVID-19 pandemic: An analysis of Baidu Index data

Qinyi Tan[†]

Center for Studies of Education and Psychology of Ethnic Minorities in Southwest China, Southwest University, Chongqing, China

qinyi.tan@outlook.com <https://orcid.org/0000-0002-2291-4554>

Meijie Wang[†]

Center for Studies of Education and Psychology of Ethnic Minorities in Southwest China, Southwest University, Chongqing, China

2352279525@qq.com <https://orcid.org/0000-0002-4396-6468>

Luyan Teng^{*}

College of International Education, Sichuan International Studies University, Chongqing, China

luyan.teng@outlook.com <https://orcid.org/0000-0001-7673-3217>

Fang He

Center for Studies of Education and Psychology of Ethnic Minorities in Southwest China, Southwest University, Chongqing, China

1281469105@qq.com <https://orcid.org/0000-0002-8302-7609>

[†]Equal contributors

^{*}Corresponding Author

Abstract

Objective: Current evidence shows the master of physical education has attracted attention since its opening. The study aims to quantify recent trends in the public interest and related online search behavior for master of physical education, and “nowcast” future scenarios with respect to the master of physical education.

Methods: Baidu Index, a database of search engines with massive information, was employed. By searching for the keyword master of physical education, and using content analysis to understand the data information related to master of physical education. It extracted the search trend data regarding Chinese interest in the master of physical education from November 21, 2016, to November 21, 2022. Finally, it compares the search trend of search interests in the master of physical education with related terms.

Results: It found that the search trend of master of physical education was on the rise overall. Specifically, the peak value appeared in September 2019, the valley value appeared around the Spring Festival each year, and the search trend in other periods was stable.

Conclusion: The raise in public interest in a master of physical education will likely result in an increase in the number of candidates who are going to attend the National Graduate Entrance Exam to pursue a master of physical education. In the coming months or more, the competition for the employment of sports professionals in China will become more intense. Affected by the COVID-19, more people are interested in health and physical exercise, and then pay attention to the Master of

Physical Education. The Sports Law of the People's Republic of China has been revised recently, which has led to more people interested in the master of physical education.

Keywords: search engine, Baidu Index, master of physical education, school sport

1. Introduction

The multi-level and diversified health needs of the public grow rapidly and continuously in the context of the COVID-19 pandemic. Sports have become an important way and strategy to improve people's health, meet people's aspirations for a better life, and promote people's all-around development (Xinhua Net, 2020; Zhang, Li & Liu, 2021). Physical activity provides numerous physiological and psychosocial benefits (Hills, Dengel & Lubans, 2015), regular physical activity is associated with lower blood pressure, reduced cardiovascular risk, and cardiac remodeling (Hegde & Solomon, 2015), it has also proven to be beneficial in improving the clinical conditions that are most frequently associated with severe COVID-19 (Dwyer, Pasini, De Dominicis, & Righi, 2020). School sport is an important basis for students' lifelong physical education, nationwide fitness, national health, and construction of healthy China (Liu & Li, 2017). As school sport plays a key role in the physical and mental development of students and teenagers, the demand for high-level talents in the physical education industry is growing. In China's primary and junior high schools, the weekly learning hours of physical education are only less than those of Chinese and mathematics (Ministry of Education of China, 2022), and the master of physical education just meets this talent demand in the schools.

The Statistical Report on China's Internet Development shows that the number of search engine users in China has reached 821 million, accounting for 78.2% of the total number of Internet users (CNNIC, 2022). The Internet has become the most convenient tool for people to quickly find information, obtain and analyze data. As the largest search engine in China, Baidu has a huge database of Chinese web pages and can quickly find relevant search results (Bergemann, Bonatti & Smolin, 2018). Baidu Index, a big data platform developed by Baidu search engine, is a tool similar to Google trends used to analyze the search behavior of network users on the platform (Fang et al., 2019). Therefore, using Baidu Index to collect and analyze online search data can better reflect the online interest of Chinese people in master of physical education.

2. Methods

A Chinese counterpart of Google Trends is Baidu Index at <http://index.baidu.com/>, which is based on queries users entered the Baidu search engine at www.baidu.com (Vaughan & Chen, 2015). Regarding Baidu Index which is a popular tool to understand online interests (Long et al., 2022), the previous studies have been applied to multiple fields, including but not limited to inclusive education, knowledge management, mental health, disease prevention and control (Long et al., 2022; Tan et al., 2022a; Wang et al., 2020; He et al., 2022; Tan et al., 2022b).

Even though the Google Trends is widely used in multiple fields in the context of COVID-19 (Adelhoefer et al., 2021; Fong et al., 2021; Li et al., 2022), this study is the first time to use of Baidu Index to explore the trend search for a master of physical education, which truly reflects the Chinese online interest in this topic, and the scope covered by the data analyzed mainly includes 31 provinces (municipalities and autonomous regions) in China (excluding relevant data from Hong Kong, Macao, and Taiwan). The Baidu index was employed to evaluate the search trend, using master of physical education as the search keyword to study the public interest in master of physical education from November 21, 2016 to November 21, 2022. To quantify public interest and online search behavior related to master of physical education since the onset of the COVID-19 pandemic, school sport is the significant term to be compared.

3. Results and Discussions

The trend research shows that the search interest of the term master of physical education is on the rise from November 21, 2016 to November 21, 2022. In September 2019, the search volume for master of physical education reached a peak, and the situation in September 2020 and September 2021 was similar. Firstly, the Outline for Building a Leading Sports Nation was issued in September 2019 by the General Office of the State Council and it further clarified the goal of building a leading sports nation and gave full play to the important role of sports in the new journey of building a modern socialist power (General Office of the State Council, 2019). The

outline also points out that the promotion of teenagers' physical literacy and healthy lifestyle should be taken as the important content of physical education, the students' physical health should be included in the assessment system of the government, educational departments and schools, and the teenagers' sports promotion plan should be fully implemented (General Office of the State Council, 2019). As early as 2016, the Outline of the Healthy China 2030 Plan pointed out that health education should be taken as an important part of quality education in all education stages, with primary and secondary schools as the focus, and school health education should be promoted (Central Committee of the Communist Party of China & State Council). In addition, we should also cultivate health education teachers, and incorporate health education into pre service education and in-service training of physical education teachers (Central Committee of the Communist Party of China & State Council). The construction of school sport needs more high-quality professional physical education teachers, which has led to a significant increase in Internet users' attention to master of physical education. Secondly, the pre- application date of the national graduate entrance exam is in September each year, and the public further determines their application goals by searching for relevant majors. The number of applicants for the national graduate entrance exam in 2019 was 2.9 million, which has increased year by year since then (Table 1). The number of applicants for the upcoming national graduate entrance exam in 2023 is expected to exceed 5 million.

Table 1 Number of applicants for National Graduate Entrance Exam from 2019-2022

Year	Number of applicants for National Graduate Entrance Exam
2019	2.9 million
2020	3.41 million
2021	3.77 million
2022	4.57 million

Therefore, the surge in the number of China's national graduate entrance exam has led to a great increase in the public's search interest in master of physical education, which is consistent with the data of existing research. The reason why students choose to continue their studies is, to a large extent, to obtain higher degrees in order to improve their employment competitiveness (Yan, Li & Zhang, 2013). The employment situation of college graduates is not optimistic, and the employment rate is declining year by year. It is not easy to find an ideal job (Liu, Du & Zhu, 2006). By 2023, the number of all types of graduates of Chinese institutions of higher learning will reach 11.58 million. Employers have increasingly high requirements for talents' degrees, prompting college students to plan to prepare the national graduate entrance exam as soon as they enter the university and take it as their own learning goal and motivation (Liu, Du & Zhu, 2006). It is expected that in the coming months or more, the employment competition for sports professionals in China will become more intense. The high popularity of China's national graduate entrance exam is related to the fact that China's economy is in transition, especially under the influence of the COVID-19, the employment pressure has become greater, forcing more people to take China's national graduate entrance exam to ease the employment pressure and improve competitiveness (China Education Online, 2021), because postgraduates find jobs more easily than the college graduates (Jun, 2015). Since the end of 2019, affected by COVID-19, more people are interested in health and physical exercise. Therefore, the search interest for masters of physical education continues to increase. The Sports Law of the People's Republic of China has been revised recently, which makes more people interested in master of physical education. The lowest value of the public's search for master of physical education generally appears around the Spring Festival in China each year. Chinese people celebrate the Spring Festival from January to February. During holidays, the public usually get together with relatives and friends or go out to play. Therefore, the search interest in master of physical education reached a valley.



Figure 1 Baidu Search Trend for master of physical education

It is found that the search trend of school sport and master of physical education is similar (Figure 2). However, the average value of school sport is higher than those of master of physical education from the overview of the search index (Figure 2). The main reason is that the Chinese Ministry of Education vigorously advocates school sport and issued a notice on strengthening the study of sports as early as 2012 (Ministry of Education, 2012). Therefore, when the relevant policies of school sport are introduced, people's retrieval habits are more inclined to directly type school sport to search information. As a result, the overall daily average value and mobile daily average value of "school sport" are higher than that of master of physical education.

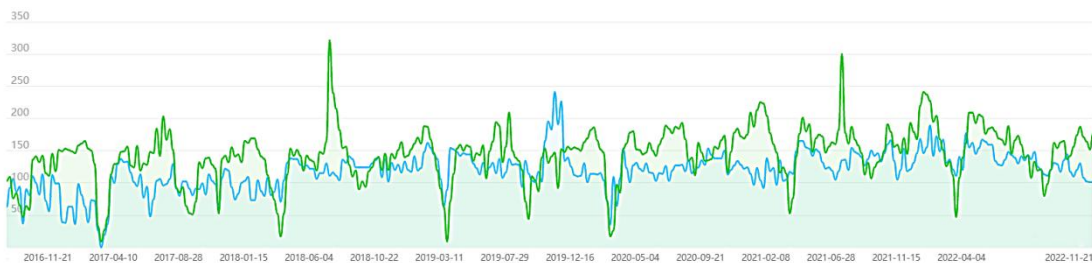


Figure 2 Baidu search volume index for master of physical education (blue) and school sport (green)

4. Limitations and Conclusion

The data source of the Baidu Index is the users of the Baidu search engine, so the search engine cannot fully represent the views of everyone. It is unknown whether the search term includes the researcher's search. Moreover, Baidu Index easily ignores the motivation behind the crowd's search behavior when collecting data by keyword input, and different search motivations will have different effects on the degree of reflection of the social attention of master of physical education. Finally, according to the use of the Internet, the representation of young people may be too high. In general, the research method has included the most representative words in this field. Although Baidu Index only provides data of Baidu search engine, in general, Baidu users account for 78.2% of Chinese netizens (CNNIC, 2022). Therefore, Baidu Index can represent the views and ideas of most Chinese netizens (Long et al., 2022).

The search interest in master of physical education shows an overall upward trend, with the peak value in September 2019, while the valley value appears during the Spring Festival, and the search trend is relatively stable for the rest of the time. The policy of physical education has a greater impact on the search interest of master of physical education. Regarding the search trend of the related search term of master of physical education, school sport is consistent with that of master of physical education, and there are consistent regular fluctuations over a period. Among them, the search trend for school sport is higher than that of master of physical education.

References

- Adelhofer, S., Henry, T. S., Blankstein, R., Graham, G., Blaha, M. J., & Dzaye, O. (2021). Declining interest in clinical imaging during the COVID-19 pandemic: An analysis of Google Trends data. *Clinical Imaging*, 73, 20–22. doi:10.1016/j.clinimag.2020.11.037
- Bergemann, D., Bonatti, A., & Smolin, A. (2018). The design and Price of Information. *American Economic Review*, 108(1), 1- 48. doi:10.1257/aer.20161079

- China Internet Network Information Center (CNNIC). (2022). The 50th China statistical report on internet development; <http://www.cnnic.net.cn/n4/2022/0914/c88-10226.html>
- China Education Online. 2021 National Graduate Enrollment Survey Report. Retrieved from https://www.eol.cn/e_ky/zt/report/2021/content01.html#sc_1_1
- Central Committee of the Communist Party of China, State Council (2016). Outline of the Healthy China 2030 Plan. Retrieved from http://www.gov.cn/zhengce/2016-10/25/content_5124174.htm
- Dwyer, M. J., Pasini, M., De Dominicis, S. & Righi, E. (2020). Physical activity: Benefits and challenges during the COVID-19 pandemic. *Scandinavian Journal of Medicine & Science in Sports*, 30(7), 1291–1294. <https://doi.org/10.1111/sms.13710>
- Fang, J., Gozgor, G., Lau, C. K. M., & Lu, Z. (2019). The Impact of Baidu Index Sentiment on the Volatility of China’s Stock Markets. *Finance Research Letters*. doi:10.1016/j.frl.2019.01.011
- Fong, H., Singh, S., Raina, J.S., et al. (2021). Alarmingly Increased Public Interest in “Chest Pain” During the COVID-19 Pandemic: Insights from Google Trends Analysis. *Cureus* 13(4): e14292. doi:10.7759/cureus.14292
- General Office of the State Council (2019). Notice on Printing and Distributing the Outline for Building a Leading Sports Nation. Retrieved from http://www.gov.cn/zhengce/content/2019-09/02/content_5426485.htm
- He, Z., Teng, L. & Tan, Q. (2022). Utilizing Baidu Index to Track Online Interest in Influenza during the COVID-19 Pandemic in China. *Cureus*, 14(8): e27582. doi:10.7759/cureus.27582
- Hills, A. P., Dengel, D. R. & Lubans, D. R. (2015). Supporting public health priorities: Recommendations for physical education and physical activity promotion in schools. *Progress in Cardiovascular Diseases*, 57(4), 368–374. <https://doi.org/10.1016/j.pcad.2014.09.010>.
- Hegde, S. M. & Solomon, S. D. (2015). Influence of physical activity on hypertension and cardiac structure and function. *Current Hypertension Reports*, 17(10). <https://doi.org/10.1007/s11906-015-0588-3>
- Jun, K. (2015). Go to Graduate School or Go to Work: What Factors Determining College Students’ Selections? *The Anthropologist*, 19(3), 773–780. doi:10.1080/09720073.2015.11891713
- Li, C., Tan, Q., Zou, M., et al. (2022). Significantly Increased Public Interest in Major Depressive Disorder During the COVID-19 Pandemic: Insights from a Google Trends Analysis. *Cureus*, 14(1): e21228. doi:10.7759/cureus.21228
- Liu, L. and Li, F. (2017). The way to deepen reform of school physical education in the background of “Healthy China.” *EURASIA Journal of Mathematics, Science and Technology Education*, 13(10). <https://doi.org/10.12973/ejmste/78096>
- Long, H., Wang, M., Tan, Q., Chen, P., & Teng, L. (2022). Increasing Interest in Inclusive Education in the Context of Action Plan for the Development and Enhancement of Special Education during the Fourteenth Five-Year Period in China: An Analysis of Baidu Index Data. *Journal of Education, Health and Sport*, 12(12), 215–219. <https://doi.org/10.12775/JEHS.2022.12.12.033>
- Liu, Y., Du, H. & Zhu L. (2006). The investigation and thinking about the achievement motive and psychology of university students who chases to join the postgraduate examination. *Education Science* (3), 89-91. Retrieved from https://webvpn.swu.edu.cn/https/537775736869676568616f787565652136b741f57693808882482c46/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFD2006&filename=JYKO200603024&uniplatform=NZKPT&v=w8sl2NJWXSgXRhp7c13SEge4xB41PPmmxIO3dSZ_bHMMCPKZMWfQh-0cwAmnF86
- Ministry of Education of China (MOE) (2012). Suggestion on Further Strengthening School Sports. Retrieved from http://www.moe.gov.cn/jyb_xxgk/moe_1777/moe_1778/201210/t20121029_143745.html

Ministry of Education of China (MOE). (2022). Compulsory Education Curriculum Plan and Curriculum Standards (2022 Edition). Retrieved from http://www.gov.cn/zhengce/zhengceku/2022-04/21/content_5686535.htm

Tan, Q., He, F. & Teng, L. (2022a). Using Baidu index to investigate the spatiotemporal characteristics of public concern towards knowledge management in China. *Scientific Bulletin of Mukachevo State University. Series "Economics"*, 9(3), 48-55. doi:10.52566/msu-econ.9(3).2022.48-55

Tan, Q., He, F. & Teng, L. (2022b). "Using Baidu Index to Understand the Public Concern of Children's Mental Health in Mainland China in the Context of COVID-19 Epidemic", *Journal of Education, Health and Sport*, 12(10), 189–198. doi.org/10.12775/JEHS.2022.12.10.022

Wang, T., Xia, Q., Chen, X., & Jin, X. (2020). Use of Baidu Index to Track Chinese Online Behavior and Interest in Kidney Stones. *Risk Management and Healthcare Policy*, 13, 705–712. doi:10.2147/rmhp.s245822

Vaughan, L., & Chen, Y. (2014). Data mining from web search queries: A comparison of google trends and baidu index. *Journal of the Association for Information Science and Technology*, 66(1), 13–22. doi:10.1002/asi.23201

Xinhua Net. (2020). Xi Focus: Xi stresses development of education, culture, health, sports sectors. Retrieved from http://www.xinhuanet.com/english/2020-09/23/c_139388750.htm

Yan, Y., Li, Z. & Zhang, X. (2013). A Study of the Impact of Job Seeking on Graduate Students. *Journal of Graduate Education* (3),55-58. Retrieved from https://kns.cnki.net/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFD2013&filename=JIAO201303012&uniplatform=NZKPT&v=yQ5vii8kft6yYZj_Hyy4haXCMfgloJgd8JyQjKX1yZHSSid1tV_Lw4UbxFN9Kgke

Zhang, Y., Li, Y., Du, K., Hu, D. Zheng, G., Wang, Z. & Liu, J. (2021). The Practical Logic of People-centered Sports Subjectivity. *China Sport Science* (12), 30-38+97.) doi:10.16469/j.css.202112004