

Esports: Definition and positive impacts

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Abstract. In modern society sport has become an integral part of everyday life. This rooting ranges far beyond participation as leisure or health care activities, but has differentiated into a vital economic sector, a philosophy of life and affects everyday interaction such as behavior and speech. The article presents a study of the impact of e-sports on society, contributes to research evaluating esport's impact on society. Also, it presents the ways to minimize negative impacts and broaden these positive impacts, so as to make greater contributions to social development. It was revealed that esports is the general trend of the development on modern society, demonstrating its positive impacts on all levels of society, providing huge social benefits and promote the development of social diversity. Also, the article presents the solutions of problems related to negative impacts of esports at all levels of society. Nowadays some measures in different fields have been put into practice with remarkable results. It is hoped that with the joint efforts of people from different social classes, in the future, the development of esports can keep up with the times, create new growth points and make greater contributions to society.

Keywords: esports, positive impacts, society, social benefits

Киберспорт: определение и положительные последствия

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Аннотация. В современном обществе спорт стал неотъемлемой частью повседневной жизни, и это укоренение выходит далеко за рамки досуга или заботы о здоровье, оно превратилось в жизненно важный сектор экономики, философию жизни и влияет на повседневное взаимодействие, на поведение и речь. Статья представляет собой исследование влияния киберспорта на общество и вносит свой вклад в исследование, оценивающее влияние киберспорта на общество. В статье также представлены пути минимизации негативных воздействий и расширения этих положительных воздействий для наибольшего вклада в развитие общества. Выявлено, что киберспорт является общей тенденцией развития современного общества, демонстрируя свое положительное влияние на все слои общества, принося огромные социальные блага и способствуя развитию социального разнообразия. Также в статье представлены пути решения проблем, связанных с негативным влиянием киберспорта на все слои общества. В настоящее время некоторые меры в различных областях были реализованы на практике с выдающимися результатами. Есть надежда, что совместными усилиями людей из разных социальных слоев в будущем развитие киберспорта сможет идти в ногу со временем, создавать новые точки роста и вносить большой вклад в общество.

Ключевые слова: киберспорт, положительные последствия, общество, социальные блага

In recent years, esports has become a hot topic of social discussion, which has derived many related industries, and it affects the development of society at different levels [1]. Generally, sport is usually positively connoted and is regarded as an engine for development, thus underlining that sport has an impact on society on many levels [2].

Sports are institutionalized competitive activities that involve rigorous physical exertion or the use of relatively complex physical skills by participants motivated by internal and external rewards [3]. It emphasizes the importance of competition, physical exertion and skill, and institutionalization. Academics such as Tiedemann and Wagner have attempted to rework the defi-

nition and perception of sport to be more accommodating for a wide range of activities, they offer similar definitions that suggest that sport is an area of cultural activity in which humans interact with one another intending to develop their abilities and compete and compare themselves to others within specific guidelines without the intention of deliberately harming anyone [4]. Arguably the world's leading sports organization, the IOC, provides no working definition for sport [5].

E-sports can be described as competitive, organized electronic games. It is a competition with information technology as the core, relying on electronic devices for interaction and unified competition rules in a virtual environment under

the premise of ensuring fair confrontation. It is an entertaining sports activity with the spirit of sports, which has a standardized competition process and complete system [6]. E-sports attracts the attention of modern teenagers and has a certain social influence [7]. In 2003, China's General Administration of Sports approved e-sports as an official sports competition [8].

The term "electronic sports" or "e-sports" dates back to the late nineties. One of the earliest reliable sources that use the term "e-sports" is a 1999 press release on the launch of the Online Gamers Association (OGA) in which then Eurogamer evangelist Mat Bettington compared e-sports to traditional sports (The OGA 1999) [9]. Around that time, the sports discussion was also fueled by a failed attempt of the organization of the UK Professional Computer Gaming Championship (UKPCGC) 1999 to have competitive gaming recognized as an official sport by the English Sports Council (M. Knox, "The Sport of Computer Gaming", 3DActionPlanet, 1999) [9].

The emergence of e-sports as a business factor in youth culture is quite often described as a ubiquitous cultural phenomenon of worldwide importance. The reality, however, shows two different gaming cultures separated by eastern and western value systems [9]. In the United States and Europe, the history of competitive gaming is usually associated with the release of networked first-person shooting games by 1997 and several professional and semi-professional online gaming leagues, the most noticeable

league is the still-influential "Cyberathlete Professional League" whose business concept was modeled after the major professional sports leagues in the United States (T. Welch, "The History of the CPL", Cyberathlete Professional League, 2002) [9].

Eastern e-sports culture started in Korea. In the mid-nineties, Korean policy-makers had deregulated advanced telecom applications causing rapid growth of the Korean broadband infrastructure and provided a good platform for the development of e-sports [10].

Although there are more and more international esports now, the eastern and western esports cultures are still separated and almost independently developed [9].

In recent years, e-sports has developed rapidly, especially in the case of COVID-19. The growth rate of the total size of e-sports users in China continues to increase. By 2022, the total size of e-sports users in China will reach 525 million [11].

As COVID-19 has hindered normal communication between different regions, online communication has made e-sports a new way of cultural exchange [12]. Cross-strait Tsinghua Research Institute has set up a research center related to e-sports to promote local economic and cultural development and serve the "Belt and Road" multi-civilization interaction. As a bridge, e-sports and games realize cross-border and cross-cultural communication and interaction to some extent [13].

Size of Esports users in China in 2018-2022

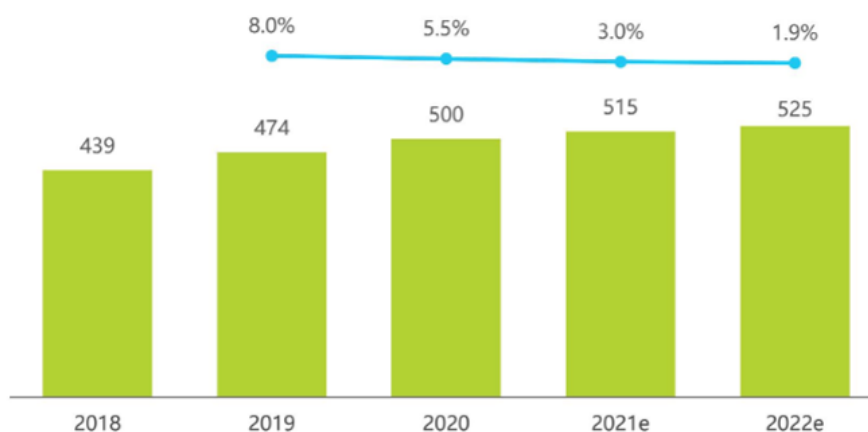
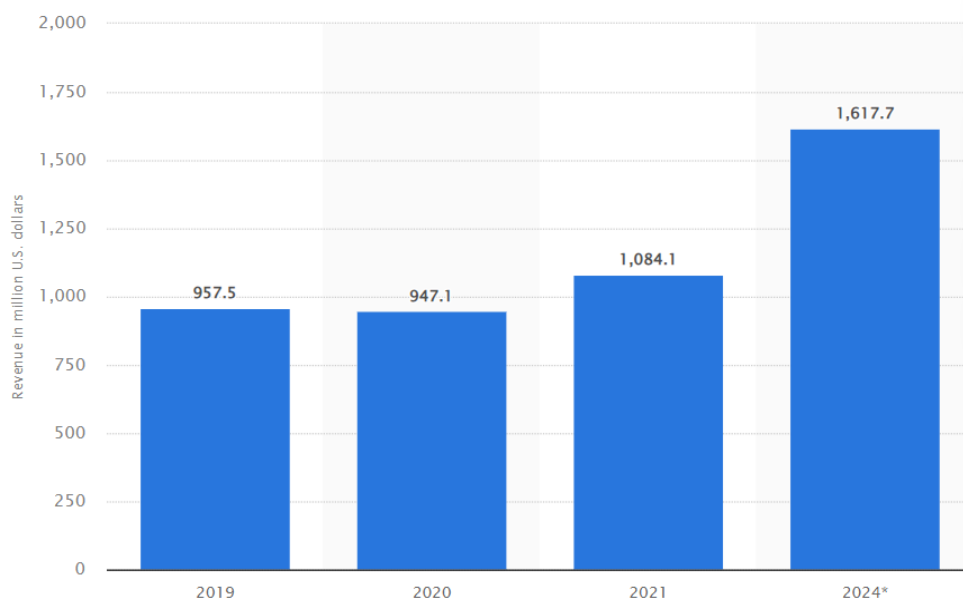


Fig. The size of e-sports users in China in 2018-2022



E-sports market revenue worldwide from 2019 to 2024 (in million U.S. dollars)

Esports creates economic benefits, promotes economic transition to sustainable development and environmental protection, and inspires global action for development on a worldwide scale [14]. From the chart, the economic benefits created by e-sports are increasing [15]. The global e-sports market was worth just over \$1.08 billion in 2021, up nearly 50 % from the previous year. In addition, the e-sports industry is expected to grow to \$1.62 billion in global market revenue by 2024. In addition, e-sports has gotten rid of the traditional economic model of high energy consumption and high pollution, is in line with the new era of planned energy conservation and environmental protection, and promotes the protection of the sustainable transformation environment of the social economy [16].

The total development of e-sports and its related industries, brings a lot of employment opportunities. New industries need workers to spring up, and with it will need jobs and game design and development-related enterprises to introduce a large number of workers [17]. At the same time, e-sports has brought about the diversification of social production. The e-sports industry has a wide range of influence and has derived a series of industrial chains related to science and technology, culture, sports, and media. It develops rapidly in many fields, produces a huge linkage effect, and promotes the development and cooperation of various cultures [18].

Esports collects data from multiple sources in informatics. Such as user-created game telemetry and game data and text mining, and then analyzing the game, combining observations, team dynamics and player interactions [19]. Because of the unique nature of video games, it allows researchers to collect large amounts of data at different levels for analysis. For example, studies have collected tens of thousands of professional players' matches and collated the human input of their matches. This information can therefore be used to develop machine learning algorithms to validate the data and provide information about player behavior patterns [20].

In terms of health promotion, esports, in which interactive video games combine sport and gaming, have been widely studied as evidence of health benefits and increased levels of physical activity [21, 22]. And esports have the advantage of increasing the speed of memory. According to the theory of visual attention to measuring action video game effects on elements of the visual attention center, among the 42 young male adults who tested the basic function of visual attention, the results showed that playing action video games seems to improve the visual information to the encoding speed in the visual short-term memory, and this improvement seems depends on the time for the game [23]. Suggesting that intense action video

games improve basic attention functions and that these improvements can be generalized to other activities such as cognitive rehabilitation training. For the human body, e-sports is good for the brain and neural exercise and is a form of entertainment that can release stress and relieve emotions [24]. At the same time, e-sports also provides a good platform to integrate communication into hobbies. In sports confrontation based on information technology as the core, trains people's thinking, reaction, and coordination ability, enhancing the collective identity and team spirit in cooperation [25].

But there are still many shortcomings and negative impacts on the current e-sports industry such as long-term addiction affect physical and mental health, the immature market system, and other factors that are not conducive to the balance of the esports market [17].

However, with the continuous transparency and standardization of the e-sports market, the market system is constantly improving, the platform is constantly optimizing content and limiting the playing time of teenagers, and the views of universities and individuals on e-sports are also improved. People at all levels of society are contributing to the positive development of esports [17].

It is impossible to eliminate the development of esports and its related industries. People began to realize that we need to find a reasonable way to coexist and develop better with esports. Esports and its related industries have also

made more explicit regulations [17]. We propose the solutions related to problems minimizing the negative impacts and continuously magnifying the positive impacts, so that esports and its industry contribute to social development.

At the social level, the government should strengthen system construction, standardize the order of esports platforms and related industries, establish and improve laws and regulations, standardize the behavior of the esports market, achieve orderly management and create a healthy esports environment, guide and establish correct concepts through high-quality, positive and healthy esports market.

Schools and universities: strengthen correct guidance and educational management. Promote the essence and connotation of esports actively, and guide teenagers to have correct cognition and self-judgment of esports.

Personal: establish correct values and improve self-judgment. Make it clear that esports is a form of sport and a means of entertainment. Learn the ability to balance life, study, and play.

Esports platform: create a healthy and positive atmosphere. Optimize the content of the game and limit the playing time for minors. There are already some platforms that limit the number of times minors can play through real-name authentication.

It is believed that with the efforts of people at all levels of society, the development of esports will certainly bring new growth points and contribute to social development.

СПИСОК ИСТОЧНИКОВ

1. Jason G. Reitman, Maria J. Anderson-Coto, Minerva Wu, Je Seok Lee, Constance Steinkuehler, E-sports Research: A Literature Review, *Games and Culture*, SAGE journals, 2019, Volume: 15 issue: 1: 32-50.
2. De Bosscher, V., Shibli, S., & De Rycke, J. (2021). The societal impact of elite sport: positives and negatives: introduction to ESMQ special issue. *European sport management quarterly*. [Электронный ресурс]. URL: <https://doi.org/10.1080/16184742.2021.1955944> (16.05.2022).
3. Wikipedia, the free encyclopedia. [Электронный ресурс]. URL: <https://en.wikipedia.org/wiki/Sport>. (16.05.2022).
4. Haibach-Beach, P.S., Reid, G. & Collier, D.H. *Motor learning and development Second.*, Champaign, IL: Human Kinetics, 2011. P. 464.
5. The International Olympic Committee (2017). *The Olympic Charter*. Lausanne: International Olympic Committee. [Электронный ресурс]. URL: <https://olympics.com/ioc>. (16.05.2022).
6. Kalle Jonasson, Jesper Thiborg. Electronic sport and its impact on future sport. *Sport in Society*, 13(2), 2010. P. 287299. [Электронный ресурс]. URL: https://www.researchgate.net/publication/248952070_Electronic_sport_and_its_impact_on_future_sport_Sport_in_Society_13_287-299. (16.05.2022).
7. Paolo Riatti, Ansgar Thiel. The societal impact of electronic sport: a scoping review, *German Journal of Exercise and Sport Research*, 26 November 2021. [Электронный ресурс]. URL: <https://link.springer.com/article/10.1007/s12662-021-00784-w#Sec8>. (16.05.2022).
8. Xv Xin. The history of Chinese E-sports, Industry, Policy and Social Stigma, December 2021. [Электронный ресурс]. URL: <https://pandaily.com/the-evolution-of-chinese-e-sports-industry-policy-and-social-stigma/> (16.05.2022).
9. Michael G Wagner, On the Scientific Relevance of

- eSports, January 2006, Conference: Proceedings of the 2006 International Conference on Internet Computing & Conference on Computer Games Development, ICOMP 2006, Las Vegas, Nevada, USA, June 26-29, 2006. [Электронный ресурс]. URL: https://www.researchgate.net/publication/220968200_On_the_Scientific_Relevance_of_eSports (16.05.2022).
10. Stephen C. Rea, South Korean E-sports and the Emergence of a Digital Gaming Culture, Sports, Culture, and Asia, Volume 21:2 (Fall 2016). [Электронный ресурс]. URL: <https://www.asianstudies.org/publications/ea/archives/crafting-stars-south-korean-e-sports-and-the-emergence-of-a-digital-gaming-culture> (16.05.2022).
11. Iresearch Global, 2020 China's eSports Industry Report, 25.May.2020. [Электронный ресурс]. URL: http://www.iresearchchina.com/content/details8_62007.html. (16.05.2022).
12. Meghan Perkins, How Has COVID-19 Impacted Esports and Its Technology Needs, Live Design News, Oct 21, 2020. [Электронный ресурс]. URL: <https://www.livedesignonline.com/esports/how-has-covid-19-impacted-esports-and-its-technology-needs>. (16.05.2022).
13. Liu li, Introduction to International Esports Industry Research Center, Cross-strait Tsinghua Research Institute. [Электронный ресурс]. URL: <https://tsinghuahx.org.cn/index.php?m=content&c=index&a=show&catid=31&id=306>. (16.05.2022).
14. Wilfried Lemke, The Role of Sport in Achieving the Sustainable Development Goals, August 2016, No. 2 Vol. LIII, Sport Aims for the Goals, United Nations, UN Chronicle. [Электронный ресурс]. URL: <https://www.un.org/en/chronicle/article/role-sport-achieving-sustainable-development-goals>. (16.05.2022).
15. Christina Gough, e-sports market revenue worldwide from 2019 to 2024, March 2021. [Электронный ресурс]. URL: <https://www.statista.com/statistics/490522/global-esports-market-revenue/>. (16.05.2022).
16. Ryan Kh, Gaming from Home is the Fastest Growing Eco-Friendly Activity, Blue&green tomorrow, 2018 (in Ch). [Электронный ресурс]. URL: <https://blueandgreentomorrow.com/environment/gaming-home-fastest-growing-eco-friendly-activity/>. (16.05.2022).
17. Lei Yuping, Pei Dechao. Research on the Current situation and Countermeasures of College students' participation in e-sports, School Sports, July 2020, P.103. (in Ch).
18. Steinkuehler, C. Schools use esports as a learning platform. U.S. News, 2012. [Электронный ресурс]. URL: <https://www.usnews.com/news/stem-solutions/articles/2018-06-12/commentary-game-to-grow-esports-as-a-learning-platform>. (16.05.2022).
19. Olshefski, E. Game-changing event definition and detection in an eSports Corpus. Proceedings of the 3rd Workshop on EVENTS: Definition, Detection, Conference, and Representation, 2015, pp. 77-81. [Электронный ресурс]. URL: <http://aclweb.org/anthology/W15-08>. (16.05.2022).
20. Low-Kam C., Raïssi, C. Kaytoue, M. Pei, J. Mining statistically significant sequential patterns. 2013 IEEE 13th International Conference. [Электронный ресурс]. URL: <https://www.businessinsider.com/nfl-ratings-drop-study-young-men-watch-esports-more-than-traditional-sports-2017-9>. (18.05.2022).
21. University of Oxford. American College of Sports Medicine. Exergaming. 03.03.2020. [Электронный ресурс]. URL: <https://healthysd.gov/wp-content/>. (16.05.2022).
22. Jenny S. E., Schary D. P., Noble K. M., Hamill S. D. The effectiveness of developing motor skills through motion-based video gaming: a review. Simul Gaming. 2017. [Электронный ресурс]. URL: <https://journals.sagepub.com/doi/abs/10.1177/1046878117738552>. (16.05.2022).
23. Wilms I. L., Petersen A., Vangkilde S. (2013). Intensive video gaming improves encoding speed to visual short-term memory in young male adults. Acta Psychol. 2012 Dec 20. [Электронный ресурс]. URL: <https://pubmed.ncbi.nlm.nih.gov/23261420/>. (16.05.2022).
24. Mark J Campbell, Adam J Toth, Aidan P Moran, Magdalena Kowal, Chris Exton, e-sports: A new window on neurocognitive expertise? PubMed in National Library of Medicine 2018;240:161-174. DOI:10.1016/bs.pbr.2018.09.006 (in Ch). [Электронный ресурс]. URL: <https://pubmed.ncbi.nlm.nih.gov/30390829/>. (16.05.2022).
25. Dylan Poulus, Tristan J. Coulter, Michael G. Trotter, and Remco Polman, Stress and Coping in E-sports and the Influence of Mental Toughness, frontiers in Psychology, Front. Psychol, 23 April 2020 (in Ch).

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