

Study on the Influence of Online Primary and Secondary School Education in Different Regions of China on the Inter-regional Education Gap under the COVID-19 Epidemic

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Abstract. The sudden outbreak of COVID-19 has brought a disaster to people around the world, disrupting the pace of people's life, work and study. China's education policy in the face of the epidemic emphasizes that preventing the spread of the epidemic to schools, safeguarding the well-being of teachers and students, and maintaining the stability of schools is a major political task for the education system and the most important task at present. The health of teachers and students as fundamental, but not at the expense of students' studies. Chinese students had to return home from school to prevent the spread of the virus. In order to deal with the epidemic, all provinces and regions across China launched a live action of "no suspension of classes". Students have begun to take online classes at home. Compared with the past, the public resources provided by online courses can make it easier for children in backward areas to get quality education. Classes from many famous teachers allow children to broaden their horizons at home. Convenient Internet technology allows children to access knowledge anytime and anywhere. However, the poor Internet facilities do cause difficulties for some students. They don't have a good learning environment and a good Internet connection. Most of these students also come from backward areas. Therefore, whether online courses can alleviate regional educational inequality in primary and secondary schools in China has become a valuable topic.

Keywords: Online classes; regional inequalities; China.

1. Introduction

In early 2020, the sudden outbreak of COVID-19 has brought a disaster to people around the world, disrupting the pace of people's life, work and study. The ravages of COVID-19 have brought many troubles to people's lives, especially for the students, their original study life has been disrupted. Chinese students had to return home from school to prevent the spread of the virus. In order to deal with the epidemic, all provinces and regions across China launched a live action of "no suspension of classes". Students have begun to take online classes at home. Many educational institutions launched various learning software. Teachers and students have to discuss and communicate on the Internet so that poor communication conditions are the primary problem faced by students. On the bright side, when students take online classes at home, there are many ways to get information. Students can easily find the information they want on the Internet. They can get a lot of knowledge by just touching the screen, which greatly improves the efficiency of learning. Online courses, once considered remote or even unacceptable, have become the safest way to learn during the pandemic. However, even before the outbreak, there was an education gap between different regions in China. This gap is mainly manifested in three levels: the first is the difference between developed areas in the east and backward areas in the west; the second is the difference between urban and rural areas; the third is the difference between high income and low income. From the perspective of regional differences, the eastern coastal areas of China are economically developed and have better educational resources and opportunities under the support of economy. In contrast, the middle and western regions of China have poor educational conditions due to economic backwardness. Under such a premise, because of the infrastructure and personal family situation, many rural children's home network situation is poor, and many children need to go far to the Internet class. Some children have to take online lessons outside in the cold to ensure a good Internet connection, while others in mountainous areas have to climb mountains to find signals. The gap between urban and rural

education is behind the problem of online courses. To sum up, compared with the past, the public resources provided by online courses can make it easier for children in backward areas to get quality education. Classes from many famous teachers allow children to broaden their horizons at home. Convenient Internet technology allows children to access knowledge anytime and anywhere. However, the poor Internet facilities do cause difficulties for some students. They don't have a good learning environment and a good Internet connection. Most of these students also come from backward areas. In this difficult environment, online classes may not be as effective as online classes. The author will discuss whether online courses during the epidemic can be an effective way to alleviate the inequality of primary and secondary education in different regions in China, and make suggestions by comparing and analyzing the data.

2. Comparison of Online Education in Different Regions of China Section Headings

2.1 Comparison of Online Learning Data in Eastern and Western China During the Epidemic

On August 23, Wang Su, the director of the Institute of International Comparative Education under the National Institute of Education Sciences, released a report on the current situation of online learning in the East and West of China at the Second Education Development Forum in Western China [1].

According to the report, parents of students in western China prefer to “record and broadcast videos and upload homework after class” [2]. Parents in the Midwest are more likely to accompany their children who study online. The frequency of online learning in central and western regions is significantly higher than that in eastern regions. The proportion of parents in the western region who like “recording and broadcasting video” and “assigning homework online, taking photos and uploading” is significantly higher than that in the eastern and central regions, while the proportion who like “live video” is significantly lower than that in the eastern and central regions [3]. Parents of students in Western (3.58) and Central (3.57) regions are significantly more supportive of using electronic devices for online learning than parents of students in Eastern (3.48) regions [4]. The satisfaction rate of parents in central China (3.66) was significantly higher than that in western China (3.62) and Eastern China (3.54) [4]. Teachers in eastern China are more positive about the effect of online education. Teachers in the eastern region have a more positive attitude towards online education and are more positive about the effect of online education. In terms of teachers’ online teaching ability, the online education skills of teachers in the eastern region are higher than those in the western region. Teachers in eastern China are more satisfied with the actual effect of online teaching than those in central and western China. In summary, “using WeChat groups and QQ groups to assign self-study tasks” (69.55%) was the main way of online teaching of the surveyed teachers during the epidemic period [4]. In addition, “live class” (52.18%) and “online interactive learning through education cloud platform and online teaching platform” (45.29%) also accounted for more than 40% [4]. The proportion of teachers in the eastern region (11.63%) who “do not assign homework” was significantly higher than that in the central region (5.69%) and western region (3.96%) [4]. the proportion of teachers in the western region (65.76%) who “assign traditional paper homework and take photos after completion” was significantly higher than that in the eastern region (50.07%) and central region (59.94%) [4]. The proportion (64.66%) of teachers in the central region who think that “slow Internet speed and delay” are the main factors restricting their online education is higher than other categories; The proportion of teachers in the western region that “lack of terminal equipment” is a higher factor (48.23%); A higher proportion (40.71%) of teachers in western China think that “unfamiliar with the form of online teaching” is the main constraint [4].

From the above statistical analysis, it is not difficult to see that the frequency of online learning of students in the central and western regions is significantly higher than that in the eastern region, and the support rate of parents is also higher, but the willingness and ability of teachers in online teaching is weaker than that in the eastern region [5]. The importance of family capital is more prominent in

distance education. The quality of online teaching in the eastern region is still higher than that in the western region due to the educational gap caused by the huge economic difference between the east and the west [6]. However, compared with offline teaching, today's online teaching allows students in different regions to easily access the resources of famous university teachers. Such things are difficult to achieve through offline teaching. It can be seen that although it is still a long way to implement measures to balance the educational differences between regions in China through online teaching, after a period of tests, people find that it is also a good way to narrow the gap [7].

2.2 Problems Exposed by Online Education

The epidemic has put online education through a great test. In a nationwide experiment in online education, children in western China have also been exposed to high-quality educational resources through online classes [8]. However, online education has not filled the gap between regions, and many problems have been exposed in the process of development.

Firstly, due to the reason that online education has high requirements on network environment and hardware equipment, not all regions have the economic strength to support the network requirements. In fact, network conditions vary from district to district and from school to school. Places with good conditions can meet the requirements of online education, but some schools in backward places cannot. Especially in the deeply impoverished areas in the west, the problem of some rural schools is particularly acute.

In addition to the network requirements, online education requires high comprehensive quality of teachers, but some teachers are not equipped with the ability [9]. Many primary and secondary school teachers in China are not proficient in making courseware, recording teaching videos and compiling teaching documents. They have not mastered the technology of mobile phone and computer screen projection, and are not capable of dealing with technical failures and unexpected problems in online education and teaching [10]. In addition, the separation of teachers in time and space also brings challenges to the ability of remote monitoring and teaching effect.

Thirdly, small rural schools with poor networks and equipment still struggle to carry out online learning due to the lack of financial resources. According to incomplete statistics, there were over 100,000 small-scale schools in China in 2018, accounting for 38.52 percent of the total number of rural primary schools [10]. The role of these schools in facilitating local enrollment and promoting rural revitalization should not be underestimated. However, due to the large investment in rural school facilities and the dwindling number of students during the epidemic, local government investment has decreased. This is the difficulty facing the informatization of rural education at present.

3. Influence and Prospect

The impact of online primary and secondary school education in different regions of China on the inter-regional education gap. Through the analysis, online education has a positive impact on the alleviation of education differences between regions in China under certain conditions.

Under the influence of the COVID-19 pandemic in 2020, online education has achieved unprecedented development. As early as 2012, the Ministry of Education issued the 10-year Development Plan for Education Informatization (2011-2020), which provided guidance and overall direction for the construction of education informatization in the next ten years [11]. In 2020, the forced impact and choice of the epidemic, the number of online educations in China reached the highest number in recent years [12].

Compared with traditional offline education, online education has its unique advantages [13]. It is not restricted by time, geography, and other objective factors, and users can learn anytime and anywhere, meeting the fragmented learning needs of users and improving their time utilization. Moreover, the emergence of personalized and customized learning services has stimulated a lot of market vitality. The rapid development of "Internet + Education" helps realize a variety of online education courses, such as the combination of one-to-one live explanation, recording and

broadcasting, video conference and other ways, and the independent selection of various courses to meet the needs of individual customized learning.

However, online education also has its significant disadvantages. According to the analysis of students' online course learning in the first half of this year, it can be known that most students do not respond well to the learning results of online education. "Poor self-control, lack of interaction, poor ability to think and analyze problems, problems cannot be timely feedback, class notes cannot be timely recorded," and other problems occurred. By analyzing the reasons, three disadvantages can be roughly drawn of online education.

The first is that the quality of teaching is not guaranteed [14]. Due to network and equipment problems, the quality of the course will be affected to some extent, and these objective factors will lead to problems in the explanation and communication of the course [14]. The second is that the quality of teachers' teaching cannot be guaranteed. In the absence of standardized management and supervision of schools or companies, teachers may also appear lazy and irresponsible, or the company may have a low threshold for recruiting teachers, and the quality of teachers is uneven. These factors directly lead to the knowledge cannot be effectively imparted, and students or users obtaining knowledge content is naturally reduced. The third problem is also the most important. The most common problem is that the classroom management and learning effect cannot be guaranteed, especially for students with poor self-control, the lack of supervision and management at all levels of the school, cannot do the normal self-standardized management of the online class, thus cannot get effective learning effect.

4. Suggestions

In order to balance the educational differences between regions exposed by online courses, listed are some suggestions.

First, people will use modern information technology to enable students in less developed areas to share quality educational resources, carry out targeted interventions and appropriate measures for rural students and their families in less developed areas, and invest appropriate resources to improve the overall quality of education informatization.

Second, to find out the difficulties and weaknesses of online learning for students in less developed areas, integrate resources from the government, enterprises, institutions, individuals and other aspects, provide accurate and targeted assistance to students and families who are unable to learn online, and provide electronic equipment, flow, technology, tutoring and other resources.

Third, people will continue to improve the basic Internet environment in underdeveloped areas. Give full play to the features of 5G technology, formulate network environment enhancement plans for rural areas in underdeveloped areas, and improve the informatization service capacity of such areas.

Fourth, people should complete the shortcomings of teachers' ability in the informatization of education in underdeveloped areas. Online education will have a far-reaching impact on the functions of teachers. Education departments should constantly increase the training of teachers in underdeveloped areas, especially the practice of online teaching and the training of online teaching-related services and support work, and vigorously improve the application and practical ability of teachers in underdeveloped areas to education informatization.

Fifth, people will mobilize social forces to actively participate in the development of IT education in underdeveloped areas [15]. It will be powerful if giving full play to social forces, mobilize the enthusiasm of large-scale enterprises engaged in the research and development of educational technology, information technology, or related equipment, and invest in the informatization of education in underdeveloped areas in the form of funds, equipment, technology, and designated assistance.

5. Conclusion

In the outbreak of the COVID-19, online courses become a good means to prevent the spread of the virus. On the one hand, online courses allow children to get high-quality educational resources from the Internet anytime and anywhere. On the other hand, online education has high requirements on network environment and hardware equipment. It also brings some difficulties to some students from poor families. A survey of online data in China shows that students in eastern China still have access to better educational resources than those in western China, but students in western China have access to higher quality education because of online courses. In some ways, this is progress. In order to promote educational equality in different parts of China, the problems exposed in western China cannot be ignored. Students from poor families have difficulty in taking online classes. The state should support them and provide more complete infrastructure for children. People should continue to improve the basic Internet environment in western areas. People should also pay attention to improving the level of teachers in the western region so as to provide better education for children. With the help of all sectors of society, the education gap between regions can be narrowed more quickly. Closing the education gap through online courses means that children in different areas can receive education more equally, and the overall quality of society will improve as a result. It can be seen that with the help of the society, although it is still a long way to implement measures to balance the educational differences between regions in China through online teaching, after a period of tests, people find that it is also a good way to narrow the gap. Online courses can indeed achieve the goal of narrowing the educational gap between different regions.

References

- [1] Huanqiu net. Huanqiu web's official account. "The second Education Development Forum in Western China 'Sub-Forum for Teachers in Rural Areas in Western China' was successfully held online". 2020.08.26. Retrieved on 2022.12.17. Retrieved from:<https://baijiahao.baidu.com/s?id=1676085003790949230&wfr=spider&for=pc>
- [2] Jiemian News. Cha Qinjun. "Take online class above rooftop, find signals in the fields, can online education fill the gap between east and west?". 2020.08.26. Retrieved on 2022.12.17. Retrieved from: <https://www.jiemian.com/article/4880540.html>
- [3] Ying Zhou, Ching Sing Chai, Jyh-Chong Liang, Mei Jin, Chin-Chung Tsai. "The Relationship Between Teachers' Online Homework Guidance and Technological Pedagogical Content Knowledge about Educational Use of Web", De La Salle University, 2017.
- [4] How effective is online learning during the pandemic? Parents in the west are more satisfied than those in the east. 21st Century Business, 2020.08.24.
- [5] Xia Xie, Lei Zhang, Hui Sun, Feifei Chen, Chunshan Zhou. "Spatiotemporal Difference Characteristics and Influencing Factors of Tourism Urbanization in China's Major Tourist Cities", International Journal of Environmental Research and Public Health.
- [6] Shiyong Liu. Analysis on Regional Differences and Influencing Factors of Household Asset Allocation in China, Journal of Physics: Conference Series, 2020.
- [7] Tie Li. Developing online education is an important opportunity to alleviate the imbalance of educational resources, Financial Journal, 2021.07.03.
- [8] China Education Network. Online Education in the face of the pandemic: A seeder for educational change in China. Retrieved from: https://news.eol.cn/yaowen/202008/t20200818_1752047.shtml.
- [9] Samson Maekele Tsegay, Muhammad Azeem Ashraf, Shahnaz Perveen, Mulugeta Zemuy Zegergish. Online Teaching during COVID-19 Pandemic: Teachers' Experiences from a Chinese University, Sustainability 2022, 14(1).
- [10] Educational Research in China. Springer Science and Business Media LLC, 2021.
- [11] He Hailiu, Qi Wang, Yu Shengsu, Liang Zhou. "Effects of Project-Based Learning on Teachers' Information TEACHING Sustainability and Ability". Sustainability, 2019, 11:5795.

- [12] Yi Lu, Jing Wu, Junlin Peng & Li Lu. "The perceived impact of the Covid-19 epidemic: evidence from a sample of 4807 SMEs in Sichuan Province". *Environmental Hazards*, Volume 19, 2020 - Issue 4
- [13] INSPIRIA, inspiria author. "Online vs Offline Education: Advantages and Disadvantages". 2021.09.22. Retrieved on 2022.12.17. Retrieved from: <https://inspiria.edu.in/online-vs-offline-education-advantages-and-disadvantages/>
- [14] Ghana Web. "Quality of teaching can't be guaranteed if we're forced back into the classroom - Gyampo". 2022.01.27. Retrieved on 2022.12.17. Retrieved from: <https://www.ghanaweb.com/GhanaHomePage/NewsArchive/Quality-of-teaching-can-t-be-guaranteed-if-we-re-forced-back-into-the-classroom-Gyampo-1454698>
- [15] Guihua Liu, Xiaofei Wang. *Comprehensive Regional Reform*. Springer Science and Business Media LLC, 2020.