The Impact of Online Education on Higher Education in the Context of Education Equity

Yujie Cai [1*]

[1]Hainan Normal University, China

Abstract. With the large-scale application of information technology in higher education, online education becomes more important and provides possibility to promote the equity of higher education. This article focus on the impact of online education on higher education in the context of educational equity, analyzes the current situation of higher education equity and online education, the basis that online education can promote higher education and offer the path options to promote higher education.

1. Introduction

With the prevalence of the Internet and mobile devices, the abundance of online resources, and the demand for convenience and innovation in education, the proportion of online education in education continues to rise. The importance of higher online education is becoming more and more prominent as the quality of talents in social requirement is increasing. This paper analyzes the current situation of online higher education in terms of product, design and content, and presents the dilemma of equity in higher education in China in terms of equity in the starting point, process and outcome of education. From the perspective of educational equity, the author proposes that online education can promote higher education by reducing the cost of education and identity differences of educated people, promoting process equity by facilitating the utilization and sharing of educational resources, and promoting outcome equity by implementing diversified evaluation and multi-dimensional supervision. The author further proposes the path options for online education to promote equity in higher education. Personalized data application and teacher qualification enhancement can optimize the basic content; credit improvement and education regulation enhancement can improve the recognition of online education; the clarification of the main responsibilities of government, universities, enterprises and users can promote the sustainable development of online education.

2. The current situation of equity in higher education in China

Education equity is divided into three aspects: the starting point equity, process equity and outcome equity. Among them, the starting point equity refers to learner's rights and opportunities to receive education; the process equity refers to the allocation of education resources; the outcome equity refers to the quality of education. [1] In education starting point equity, there are discrepancies between urban and rural areas; eastern and western regions; high-income families and ordinary families; men and women. In education process equity, there are discrepancies in policy support and student sources between private and public schools, double first-class and non-double first-class schools. [2] In education outcome equity, there are grades discrepancies caused by lax invigilation and bribery, [3] employment discrepancies caused by unreasonable market orientation, and ability discrepancies caused by school strength and cultivation focus. [4] In general, there are still many inequity problems in Chinese higher education.

3. The current situation of higher online education in China

Online education generally refers to web-based learning behavior, which simply means using personal computers, mobile smart terminals, etc. to complete online classes, exercises, discussions, exams, etc., specifically through catechism, micro-classes, videos, real-time interactive quizzes and other ways to learn relevant knowledge. Higher online education includes higher academic degree education and other forms of non-academic education such as vocational qualification education and job skills training.

Higher online education develops quickly in our country and has obtained certain achievement. The first is product diversification, such as resource products based on micro-courses, personalized question banks and online interactive classes; tool products providing production, instruction and navigation function which is represented

---

[*]490949542@qq.com

by Flash, Author Ware and Camtasia studio; platform products integrating resource and tools, providing interactive space for teachers and students which is represented by NetEase Open Course and MOOCs. [5]

The second is design specialization. The education mode has changed from one-way and closed education to interactive and open education. The educational concept has changed from teacher-centered to student-centered. Moreover, learning is not only an internalized individual activity, but also an interactive process based on large-scale networking and socialization. [6]

The third is rich content. Chinese higher online education is rich in subjects and strong in teachers' qualifications. According to scholars' statistics, China has launched 1,291 national quality open online courses, covering all first-level disciplines except fisheries. [7] Among them, 75.9% of the teaching universities are first-class universities and 19.0% are first-class discipline universities and most of the teachers have senior titles. [8]

4. Online education can promote education equity in higher education

Online education can promote higher education equity in the starting point. Online education reduces educational costs for learners. Chinese scholars define the personal direct cost of education as the cost of education borne by students or families, i.e., tuition and fees, books and stationery, transportation, and living gaps. [8] Compared with offline education, students can save more personal direct costs online. In terms of commuting, students can reduce the cost of round-trip airfare and train fare; in terms of accommodation, many universities have announced to reduce the number of dormitories in recent years and do not provide accommodation for some students, especially for on-the-job postgraduates. For these students, online education can greatly reduce the accommodation cost. In terms of living gap fee, the cities with the largest number of Chinese colleges are Beijing, Wuhan and Guangzhou, followed by Jinan, Shanghai, Chongqing and Xi'an. [9]And these cities are ranked in the top 20 of the list of major cities' consumption power in 2021. This shows that online education can save students in low spending provinces in terms of living gap fees; in addition, many online courses offer electronic versions of lectures, exercises and PPT for students to download themselves, thus reducing tuition and fees. Online education breaks the barrier of learners' identity. Traditional education is highly restrictive in terms of personal status, and in addition to the willingness to learn, the educated must also meet the strict requirements of colleges and universities for student enrollment. Higher level schools often have higher education and economic requirements; in addition, from a global perspective, colleges and universities also have color and racial discrimination for their students. Online education platforms are less restrictive in terms of personal identity, and students only need to register

for an account and provide relevant information in order to enroll in a course. (Individual programs such as SPOC set restrictive access conditions for students.[10]) Since online education platforms have low personal identity requirements, students are free to use online education platforms and learn content of their interest regardless of their color, age, gender, household registration, economic level, and educational status. Therefore, online education breaks down identity barriers and achieves equal education rights and opportunities for education recipients.

Online education can promote higher education equity in the process. Online education promotes the maximization of the role of educational resources. Educational resources refer to the human, material, and financial resources, etc. that are occupied, used, and consumed to achieve the purpose of education. [11]As for financial resources, it is difficult to compare them because each university is located in different regions and has different policies. In terms of material resources, online education promotes the dissemination of teaching materials, cases, films, pictures, and courseware. In the early stage, although educational resources were available on the Internet, students' awareness of online learning was not strong, which led to limited influence of resources and small dissemination; in the later stage, with the rise of online education, teachers needed to upload educational resources and students needed to finish learning by downloading educational resources, which led to the expansion of influence of educational resources. In terms of human resources, online education realizes the advantages of teaching talents in colleges and universities to the maximum. The number of teachers in China is large, but the proportion of quality teachers is small and unevenly distributed, while through online education, excellent teachers are no longer oriented to one major and one school, but to a wide range of learners in all regions. As long as a student has a device that can connect to the Internet, he or she can freely choose a favorite course and teacher, and the audience for an excellent course can be as many as millions compared to a traditional classroom. Online education promotes resource sharing. Online education can reduce the barriers in cooperation between different regions, schools, and time zones, and promote the flow and sharing of resources, thus improving the quality of resources based on the enrichment of educational resources. Take China's education platforms as an example, Netease Open Class platform provides open courses and TED lectures from famous foreign universities such as Harvard, Yale, and Stanford to promote the sharing of educational resources among international universities; MOOC, Treenity to and other platforms provide online courses from domestic universities to promote the sharing of educational resources among domestic universities; Superstar Learning also provides the function of finding and reading e-books for free on the basis of providing

online courses to further The learning pass also provides the function of searching and reading e-books for free, which further promotes the flow of education resources in China.

Online education can promote higher education equity in the outcome. Online education implements diversified evaluation. The traditional offline assessment is based on regular quizzes conducted by the teacher, which is an assessment method focusing on the results, while the assessment represented by the MOOC focuses on the process. Take "Beautify Your Teaching PPT" as an example, the assessment score of this course consists of three parts: 40% of the video watching time, 40% of the unit test and 20% of the unit assignment, among which the video watching time examines whether the students have completed the learning tasks according to the amount, the unit test examines the students' mastery of the knowledge points, and the unit assignment adopts the form of mutual evaluation, which also tests the students' hands-on ability and appreciation ability. In this course, the assessor is not only the teacher but also the students, and the assessment content is upgraded from knowledge mastery to knowledge application and evaluation thinking ability. In addition, in other courses, there are also assessment parts such as "class discussion" and "study habits". When the number of effective answers and questions and the number of study sessions and study hours meet the study requirements, the platform will give the corresponding score. Online education is more diversified in terms of evaluation methods and objects, and can evaluate learning results in a more objective and humane way. Online education creates multi-dimensional regulation. Offline exams are often proctored manually, with the proctor walking back and forth and observing students' movements to determine whether they are cheating. Coursera started to test the possibility of applying typing rhythm recognition technology to identity authentication as early as 2012, and officially launched the "Signature Track" certificate program in January 2013. [12]The online education platform in China has been developing and maturing, involving three parts: authentication, motion monitoring and mobile monitoring. For authentication, the platform sets up face recognition to confirm the identity of candidates and prevent substitution, and uses handwritten proof as an auxiliary means; for motion monitoring, the platform turns on the camera throughout the whole process and captures it regularly to ensure that candidates do not consult the paper version of the materials or use two mobile devices to answer questions at the same time; for mobile monitoring, the platform sets a time limit for answering questions to reduce cheating time, randomizes the order to avoid copying answers, prohibits screen cutting to search for questions on other websites, and dominates the exam to prevent skipping pages and exchanging exam information. Online education monitoring mode is more dimensional and comprehensive compared to offline, if the platform is strictly enforced, it can effectively reduce the probability of students cheating.

5. Path options for online education to promote equity in higher education

By optimizing the basic content, online education can promote equity in higher education. The first is to study user data, push personalized education content suitable for users according to their age, education level and major direction, and push courses related to the major according to keywords searched by users; The second is to introduce quality teachers and improve the content of education. At present, some online courses do not match the major of the universities. For example, science and technology universities which are not outstanding in liberal arts offer many liberal arts curriculums, leading to poor course feedback. Some scholars pointed out that the teachers of many high-quality courses are mostly academic leaders, which shows that users have a high demand for teachers' professional level. [10] The country and universities should encourage more excellent teachers to participate in the production of online courses.

By increasing the recognition, online education can promote equity in higher education. Professor Li Qingquan, vice president of Shenzhen University, believes that the ability to grant credits is the key to the sustainable development of MOOC, and the realization of recognition of learning results is the fundamental and prerequisite for MOOC to develop from open courses to open education. [11] At present, all colleges and universities are actively exploring credit recognition, but most of the accredited courses are limited to public elective courses. The accredited professional courses are mostly set up by teachers of their own schools, and the conversion credits of online courses are not high. Behind the caution of universities is the imperfect credit certification system: first, what type of credit should be converted into the credit of the recognized online open course, that is, converted into compulsory course credit or elective course credit; Second, after defining credit types, how should universities decide the proportion and weight of online open course credits in the total credits of training programs. [12]

Therefore, firstly, colleges and universities should classify the course types and make clear the categories of general courses, elective courses, compulsory courses, etc. Secondly, the government can carry out unified credit certification for online development courses, so as to provide reference for universities and reduce the task of course selection. Finally, universities should develop experimental programs with flexible policies and more course options according to the actual situation of the university.

By clarifying the role of each subject in the construction, online education can promote higher education equity in outcome. The government is responsible for leading and supporting online education.

Firstly, the government should issue regular guidance policies to set goals for the development of online education. Secondly, the government should provide financial support to build information equipment in backward areas, reduce the digital gap between urban and rural areas, and provide financial compensation to universities that produce excellent courses. Finally, the government should protect the intellectual property rights of universities and crack down on the piracy of educational resources. Universities are responsible for the research and development of online education. Firstly, universities should increase curriculum input, give play to their professional advantages, and invest in excellent teachers. Secondly, universities should improve the curriculum content and timely update the content according to the feedback of learners. Finally, colleges and universities should strengthen curriculum assessment and update the question banks of homework and tests regularly. Enterprises are responsible for assisting and technically supporting online education. They should develop the design of intelligent learning environment software, basic service platform, network infrastructure hardware, establish the school resource service and resource sharing system, form a seamless platform integrating management, teaching, and learning services.

6. Conclusions

This paper focuses on the stage of undergraduate education in the analysis of higher education because of the limited data. Online education equity in higher education, graduate education, and doctoral education will be discussed in more detail in subsequent studies. This paper suggests that online education has great potential to break educational inequity, but many professions are highly practical, such as doctors and teachers, so the professions that can achieve full coverage of online education are limited to theoretical professions. The author believes that equity exists in both the natural and the real state, and that the ideal is to achieve higher education for everyone and to have the right to choose the content of education. The limitations of higher online education equity in this paper cannot be avoided by the current social situation and practical needs , but every discussion of equity is the pursuit of a more perfect equity, therefore, the author believes that online education has a non-negligible value to promote the future of education equity.

References

1. Shanmai Wang, J B Univ Normal, **03**,93-97 (Social Science Ed, 2008)
2. Xu Wang, Res Edu Dev, **18**, 26-30. (2006)
3. Lin Wang, Qi Li, J High Educ Manag, **7(04)**, 72-77, (2013)
4. Jiping Zhang, Ke Deng, Huili Ma. Educ Teach Res, **35(11)**, 94-103 (2021)
5. Xiaohong Yang, Xiaozhang Zhou, Res Vis Educ, **38(08)**, 63-69+77 (2017)
6. Xiaoying Feng, Yuwei Sun, Jieting Cao, Ch J Distance Educ, 02, **7-16+92**, 2019(02)
7. Lei Zhang, Jun Wang, Digital Educ, **5(05)**, 36-41, (2019)
8. Xu Fang, Ch High Educ Res, **07**, 94-99, (2018)
9. Guang Ping, Yali Du. Mod Educ Manag, **01**, 13-18, (2016)
10. Feng Jin, Sci Technol Dly, **006**, (2020).
11. [Xiuqin Zhang. Chinese Univ Teach, **01**, 79-83, (2017)
12. [Zanyong Qi, Dan Liu. J Edu Sci, Hunan Norm Univ, **20(04)**, 83-92, (2021)