



Changes in International Student Mobility amid the COVID-19 Pandemic and Response in the China Context

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Received: 16 July 2020 / Accepted: 19 September 2021 / Published online: 19 October 2021
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Abstract

International student mobility is an important indicator of the internationalization of higher education, and an important way to cultivate talents with global has had a huge impact on the mobility of international students. Specifically, the scale of international student mobility has decreased, changes in the geographic pattern of international student mobility have intensified, the form of international student mobility has changed, and the competition in the international study abroad market has intensified. As a major country that sends and receives international students, China has adopted a series of response measures to reduce the impact of the pandemic on international student mobility and has formulated a long-term development strategy to promote the mobility of international students. To promote international student mobility in the post-epidemic period, countries should provide support for international students from home and abroad, promote the diversification of international student mobility, and strengthen internationalization at home.

Keywords COVID-19 · International student mobility · International higher education · China context

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1 Introduction

1.1 Background

In December 2019, an outbreak of pneumonia of unknown origin broke out. The outbreak was later found out to be caused by a novel coronavirus: SARS-Cov2. The new virus can spread quickly through respiratory droplets and contact, and people of any age can contract the disease (Meng et al. 2020). A few months later, the pandemic, known as COVID-19 (coronavirus), spread rapidly around the world and was declared a pandemic by WHO on March 11, 2020 (Zhang 2020).

In order to curb the spread of the pandemic, countries have adopted measures such as entry and exit restrictions as well as school closures. Consequently, international mobility in higher education, which is highly dependent on international travel, has been greatly affected. According to the survey launched by the International Association of Universities (IAU) from March 25 to April 17, COVID-19 had an impact on international student mobility of 89% of 576 higher education institutions (HEIs) participating in the survey (Marinoni et al. 2020). As important players in the internationalization of higher education, governments, HEIs, and international students are facing unprecedented challenges.

In recent years, China has been the world's largest source of international students and has also become one of the world's largest destinations for international students. Facing the plight of international students and online teaching caused by the pandemic, the Chinese Ministry of Education has joined forces across the country to take response measures to provide support for international students. In June 2020, China further clarified its plan to expand education to the outside world (Chinese Ministry of Education 2020). China's anti-epidemic measures and future education plans can provide some inspiration for international higher education.

1.2 Related Research on International Student Mobility and the Impact of the Pandemic

Since the 1980s, with the development of the multi-polar world, international contacts and exchanges have become increasingly frequent. The internationalization of higher education has increasingly become the focus of governments and education circles. According to the definition of the International Association of Universities (IAU), the internationalization of higher education is a process of combining transboundary and cross-cultural viewpoints and atmospheres with the main functions of universities such as teaching, scientific research, and social services (Zhang 2005). At present, international student mobility is one of the most important indicators of the internationalization of higher education (De Wit 2019).

Scholars from various countries have conducted a lot of research on the concept, type, structure, and influencing factors of international student mobility. According to the relevant definition of UNESCO (United Nations Educational, Scientific and Cultural Organization), international student mobility refers to the movement

of students between their home country/region and the host country/region to obtain learning opportunities (Dong 2013).

There are many types of international student mobility. According to Knight (2012), the forms of international student mobility include six categories: (a) a complete degree program in a foreign country, (b) short-term study abroad experience as part of a degree program in a domestic institution, (c) two or more cross-border cooperation degree programs between institutions or providers, (d) research and field trips, (e) internships and practical experience, and (f) study tours, seminars. With the development of society and technology, new virtual forms of international student mobility have emerged (Wells 2014).

In the past ten years, the scale of international student mobility was constantly expanding. In 2018, there had been more than 5 million international students worldwide, an increase of 67% compared to a decade ago (Ma and Cheng 2018). The geographical distribution of international student mobility is uneven. European and American countries are the most popular study destinations, and China, India, and South Korea are the most active providers of international students (Nicolescu and Galalae 2013). At present, although European and American countries are still the preferred destinations for studying abroad, Asian countries such as China and Japan are emerging as host countries for international students (Pfaff-Czarnecka 2020).

Most of the existing studies are based on push–pull theory and social capital theory to explore the influencing factors of international student mobility. For example, McMahon (1992) used the push–pull theory to analyze the motivations of international mobility and proposed that the driving factors from the source country include the level of per capita GDP (gross domestic product), the government's emphasis on educational development, and local educational opportunities. The pull factors from the destination country include the economic scale of the destination country, scholarship or other support provided by the destination country, the relationship between the destination country and the source country, etc. Waters (2007) proposed that the pursuit of high-quality overseas higher education is to protect the advantages of the class and promote the reproduction of family cultural capital. In addition, some scholars analyze objective and subjective factors. Soutar and Turner (2002) proposed that objective factors include the cultural atmosphere, academic reputation, school types, course types, professional settings, and teacher quality of HEIs. Subjective factors include family members' opinions, friends' choices and suggestions, etc.

Since the outbreak of the COVID-19 pandemic, scholars analyzed its impact from many aspects such as international politics, economy, and education. In international politics, the pandemic has accelerated the rise of nationalism and protectionism. Nationalists tend to resist international cooperation and adopt extreme national security policies (He and Chen 2021), such as hoarding of key medical supplies, ending multilateral trade operations, and xenophobia (Wang 2021), thus making international relations more tense. On the economic front, the pandemic has severely hit the global economy and accelerated the shift from economic globalization to regionalization and localization (Wang, and Sun 2021). The global political and economic turbulence has profoundly affected the international exchanges of education. Scholars have also paid attention to the impact of the COVID-19 pandemic on

international student mobility. International organizations such as UNESCO (Goris 2020), research teams such as the Institute of International Education (Martel 2020), and scholars from various countries (Xiong et al. 2020) have all conducted investigations on the mobility of international students after the pandemic. These studies all predict that the mobility of international students will decline. COVID-19 also brings some long-term and indirect effects. The COVID-19 pandemic has changed the weight of factors influencing students' and parents' decisions on studying abroad and country choice, and health protection and safety will occupy a more important position (Marginson 2020).

The current research on the impact of COVID-19 on international student mobility is still in its infancy. It focuses more on the prediction of the future development of international student mobility and less research on national countermeasures and experiences. Therefore, this paper analyzes the impact of the pandemic on international student mobility and countermeasures from the case of China.

1.3 Main Structure of this Paper

This paper mainly includes four sections. The first section is an introduction. In this part, we briefly introduce the background of the article, the related research on international student mobility, and the main structure of this paper.

In the second section, we analyze the impact of the COVID-19 pandemic on international student mobility from aspects including its scale, international structure, form, and international market competition.

In the third section, we take China, a rapidly rising developing country, as an example to analyze the initiatives it has taken regarding international student mobility during the pandemic.

The last section is the conclusion. In this part, we summarize the main points of this paper and put forward some suggestions for the future development of international student mobility.

2 Impacts on International Student Mobility Due to COVID-19

Due to the impact of the COVID-19 pandemic, the scale, pattern, form, and market competition of international student mobility have been or are changing.

2.1 The Scale of International Student Mobility Decreases in the Short Term

Due to the outbreak of the pandemic and the measures taken by countries to control the pandemic, international students and prospective international students face various obstacles, including health risks, travel restrictions, university closures, difficult visa applications, and cancelation or postponement of examinations related to

studying abroad. An ongoing global survey¹ by Quacquarelli Symonds (QS 2020a, b, c) showed that from mid-February to May, more and more prospective international students changed their study abroad plan due to coronavirus. Its latest statistics showed that 60% of the students surveyed intended to delay or defer their entry to next year, 7% intended to study in a different country, and 6% of students no longer wanted to study overseas. The international student enrollment data for the 2020–2021 academic year have already reflected the decline in the scale of international student mobility caused by some international students' abandonment of going abroad. Taking several major international student reception countries as examples, the "2020 US Open Door Report" issued by the Institute of International Education (IIE 2020) of the USA in November 2020 shows that the number of international students enrolled in the fall of 2020 has fallen by 16%, of which more than 40,000 students chose to delay admission. Besides, the total number of registered international students in Australia in October 2020 was 677.4 million, a decrease of 8% from the same period last year (Australia Government 2020).

Although the reduction in the scale of international student mobility has become an established fact, there is still controversy as to whether this change is temporary or long-term. Scholars such as Simon Marginson predicted that it will be difficult for the scale of international student mobility to recover to the level of 2019 at least in the next five years (Zhou 2020). The global economic recession caused by the pandemic has spread to various fields, including international student mobility supported by high fees. But other scholars (e.g., Hans De Wit) argued that the demand for studying abroad will not fundamentally change (Zhou 2020), because the demand for international student mobility has not weakened. They borrowed Douglas's theory to support their point of view. According to Douglass (2020), when the economic recession caused by the pandemic is close to depression, the demand for higher education will increase. Education may become an alternative option when a large number of people are unemployed or difficult to find employment. It is too early to make a conclusion. First of all, the international structure of student mobility will be more complicated. While the scale of student mobility in some countries is decreasing, the scale in other countries is increasing. Secondly, in addition to a certain regularity, changes in international student mobility are more affected by human factors. According to the push–pull theory, international student mobility is affected by both the driving factors of the source country and the pull factors of the destination country (such as policy and economic support). Therefore, the open education policy adopted by countries during and after the COVID-19 pandemic is also crucial. Finally, the forms of international student mobility are becoming more diverse. Short-term mobility, virtual mobility, and access to domestic international schools can meet the international education needs of students to a certain extent

¹ QS established ongoing surveys to take the pulse of prospective international students and HEIs throughout the coronavirus crisis. Since it was established in mid-February, the QS prospective international student survey has attracted more than 30,000 respondents. An accompanying survey that targeted higher education professionals in universities across the globe has attracted more than 1,000 respondents. This report focuses on the results of the ongoing prospective international student survey, representing an overview of responses collected between mid-February and May.

and make up for the reduction of physical mobility. These changes will be analyzed in detail below.

2.2 Accelerating Changes in the Structure of International Student Mobility

In recent years, the structure of international student mobility is gradually changing. The USA, as a major receiving country for international students, is still the most popular study destination, but the growth in the number of international students going to the USA is slowing year by year. In contrast, East Asian countries such as China and South Korea are becoming more and more popular with international students (Pfaff-Czarnecka 2020). The outbreak of the COVID-19 pandemic is accelerating this change in the international landscape. Due to various considerations such as policy environment, health issues, and economic burden, international students are likely to turn their attention to countries where the domestic environment is relatively safe, and the tuition is relatively affordable, such as China, South Korea, and Japan (Zhou 2020). In contrast, European and American countries are facing the dilemma of the reduction in the number of international students due to the unoptimistic pandemic situation. The international education industry of those English-speaking countries that have long been a seller's market will have to compete for the reduced number of international students in the market.

As an international student exporting country, the situation of each country is also different. QS's (2020b) survey results show that among China, the European Union (EU), India, and North America, the study abroad plans of Chinese students are most affected by the pandemic. However, the proportion of Chinese students who indicate to give up studying abroad is the smallest (only 4%). Obviously, China will still maintain its status as the largest international student exporting country in future. India has the largest proportion (54%) of students who indicate to delay enrollment, which may be related to the economic difficulties faced by India. As Altbach and De Wit (2020) had mentioned: COVID-19 has increased the gap and inequality between countries, and the poorer the region, the more severe the impact.

In addition to the intensified changes in the horizontal structure of international student mobility, its vertical structure has also been affected. The groups of undergraduates, masters, and doctoral students may have different attitudes toward studying abroad. QS's (2020c) survey results show that undergraduates' study abroad plans are least affected, and they are the least willing to postpone their studies. This may be because undergraduates have less academic accumulation, so they have fewer choices in terms of career prospects and employment opportunities. Among undergraduates, post-graduate master students, and doctoral students, post-graduate master students are the least willing to accept online teaching (QS 2020c). This may be because they have relatively short courses. If some courses are transferred online, this will account for a larger proportion of their course delivery. Considering the economic value of campus learning, such as the use of facilities, making alumni, traveling abroad, and the quality of degree teaching, prospective international students usually think that online learning is less cost-effective than physical mobility.

2.3 Changes in the Form of International Student Mobility

The pandemic has promoted an unprecedented scale of online teaching. According to the IAU survey report, due to COVID-19, 60% of HEIs have adopted virtual mobility or collaborative online learning to replace physical student mobility, and 5% are developing or planning their development (Marinoni et al. 2020).

Virtual mobility has long been proposed and developed as an efficient way of educational mobility. Teresevičienė et al. (2011) defined virtual mobility as a form of learning, research, communication, and collaboration based on the following characteristics: (a) cooperation of at least two higher education institutions; (b) a virtual component of the learning environment supported by Information and Communication Technology; (c) people from different backgrounds and cultures work and study together; and (d) the main purpose is to exchange knowledge and improve cross-cultural competence. Although people have become more aware of virtual mobility in recent years, the success rate of students participating in virtual mobility projects is not ideal (Poulová et al. 2009). The pandemic provides an opportunity for the popularization and improvement of virtual mobility. Since the outbreak of the COVID-19 pandemic, almost all physical mobility has been replaced by existing or newly developed virtual mobility forms, including Massive Open Online Course (MOOC), live broadcast, etc. Collaborative Online International Learning (COIL), which has been explored or implemented by some universities, also provides a systematic method for virtual mobility. For example, COIL uses digital technology to support students in academic cooperation with international counterparts, so that students can develop cross-cultural competence without going abroad. Compared with traditional online teaching based on teacher lectures, COIL provides students with opportunities to interact, cooperate, and understand each other's cultural backgrounds.

Compared with physical mobility, virtual mobility breaks through the constraints of space and time and has played an important role under the travel restrictions brought about by the pandemic. However, teaching that completely relies on the Internet has also exposed many quality problems and a lack of campus experience. On the one hand, the learning effect of current online teaching is far from what is expected. First, the lack of teaching and learning equipment or network problems in some places will affect the teaching and learning progress. Second, many teachers have insufficient technical literacy, fail to change teaching methods in time, or are unwilling to share and build curriculum resources, resulting in poor teaching quality (Wu et al. 2020). Third, when students study at home, they may feel difficult to concentrate and do not have advanced preparation and extracurricular learning, which leads to poor learning outcomes. The existence of these problems makes the quality of online teaching worse than face-to-face teaching. On the other hand, during the pandemic, offline courses were basically transferred to online courses. HEIs are losing the advantages of their physical campus existence, which can bring students a good experience to meet top scholars and excellent classmates. This aroused students' dissatisfaction that colleges and universities still charge the same tuition fees as offline teaching. Many HEIs in the USA (such as Brown University, Columbia University, and Duke University) have been sued by students and have been required

to refund part of their tuition and service fees (Davis 2020). In Jakarta, Indonesia, hundreds of college students marched to demand a 50% reduction in tuition fees due to the closure of the campus during the COVID-19 pandemic (Yamin 2020). Students argued that they study at home through online courses and do not use campus facilities. It is unfair to pay the same tuition fees as usual, not to mention some private universities increased tuition fees after the outbreak. Therefore, many international students are more inclined to accept face-to-face teaching and even prefer to postpone admission. In the post-epidemic period, increasing international students' acceptance of virtual mobility forms or developing a more suitable form of international mobility has become a focus of attention in the academic community.

2.4 Intensified Competition Faced by Universities in the Study Abroad Market

While prospective international students reconsider their study abroad plans and destinations, HEIs, another important participant in international student mobility, are also facing huge challenges. The most direct impact is, the pandemic has reduced the main sources of financial income (including tuition fees from international students, charitable donations, research funding) and incurred non-budgetary expenditures (such as helping students move out of campus, giving financial assistance, and compensating for dismissed employees) of many universities, which are consequently facing a serious financial crisis. The first to bear the brunt are universities from the USA, UK, and Australia, whose higher education business models increasingly rely on the contributions of international students. Although many institutions quickly tried to overcome the crisis by halting recruitment, reducing employee salaries, and laying off staff, the higher education systems in these countries could still suffer devastating effects. According to statistics, since the COVID-19 pandemic as of July 2020, 33 universities in the USA have announced their permanent closure (Cheng et al. 2020).

Many HEIs urgently need to alleviate the financial crisis by attracting more international students. However, due to the short-term decline in the demand for international students studying abroad as buyers, HEIs as sellers correspondingly face more intense competition for students in the study abroad market. Many European and American universities are trying their best to retain international students. For example, Queen's University and Manchester University announced charter flights to pick up international students. Durham University and Glasgow University have reduced tuition fees and issued scholarships to attract international students (Cheng et al. 2020). In comparison, although Japan, South Korea, China, and other emerging international student host countries currently have comparative advantages in terms of pandemic control and international education prices, their higher education quality is still not as attractive as European and American countries. Therefore, these East Asian countries also need to explore suitable ways to attract international students in the fierce market competition. How the number of international students will change in future depends not only on the pandemic situation and the strength of higher education in these countries, but also on their strategies of HEIs to deal with the crisis of student loss.

3 China's Response to the Pandemic and Its Future Blueprint

“COVID-19 has the potential to radically reshape our world, but we must not passively sit back and observe what plays out,” said Ethiopian President Ms. Sahle-Work Zewde, Chair of the International Commission on the Futures of Education. “Now is the time for public deliberation and democratic accountability. Now is the time for intelligent collective action (UNESCO 2020a, 2020b).” China has adopted a series of crisis response measures to reduce the impact of the pandemic on international students and has formulated a long-term development strategy to promote the mobility of international students.

3.1 China's Response to the Pandemic

After the outbreak of the pandemic, international students living abroad are the first to bear the brunt. According to statistics from the Ministry of Education of the People's Republic of China, there are about 1.6 million Chinese students studying abroad, and most of them were abroad when the outbreak occurred (Liang 2020). What is more, they are widely distributed in different countries and regions. There are about 410,000 in the USA, about 230,000 in Canada, about 220,000 in the UK, about 110,000 in Germany and France, about 280,000 in Australia and New Zealand, and about 180,000 in Japan and South Korea (Liang 2020). Each country's pandemic development stage and prevention and control measures are different, so each international student faces a different situation. China has a difficult task in mitigating the impact of the pandemic on international students.

Since it was unrealistic to withdraw all Chinese students who were abroad at the time of the outbreak, the Chinese Ministry of Education united all forces to provide overseas students with pandemic prevention materials, guides, and risk assessment assistance. In the case of an overall shortage of overseas pandemic prevention materials, Chinese embassies and consulates abroad issued “health packs” containing anti-pandemic materials and guidelines to overseas students. Meanwhile, the Ministry of Education commissioned hospitals to develop online applications, where international students can complete the risk self-assessment of suspected symptoms within 3 min (Hao 2020). Due to the exaggeration of public opinion and changes in the international situation, Chinese students have also been discriminated against and even attacked abroad. To alleviate the ubiquitous psychological pressure faced by international students (Huan et al. 2020), the Ministry of Education has integrated universities to build a psychological public welfare consultation platform. During this fight against the pandemic, China's education system has shown a high degree of cohesion and execution with the central government and education administrative departments as the core. Timely central response, coordination, and management of the pandemic compensated for delays in information generation and local actions. In contrast, many other countries have had disastrous consequences due to lack of coordinated national actions and financing, as well as poor coordination among administrative departments (Ahmad 2020).

Faced with travel difficulties, many students still do not want to give up their study abroad plans. But most of them are reluctant to spend expensive tuition fees for online lessons. The Chinese Ministry of Education has introduced a new policy to solve the dilemma of these international students and ensure the mobility of international students under the pandemic. It allows students who are hindered from studying abroad to study in some domestic universities or enter Chinese-foreign cooperatively-run schools through assessments. On the one hand, many Chinese universities (such as Peking University, Tsinghua University, and Shanghai Jiao Tong University) have cooperated with foreign universities such as Cornell University to let international students from China temporarily study on domestic campuses and participate in online and face-to-face hybrid courses (Cornell University 2020). When the threat of the pandemic is lifted, these international students can continue their studies on the campuses of foreign universities. This is actually a mobility mode that combines virtual mobility and physical mobility. In this way, these international students can not only get the educational facilities and services of top domestic universities, but also the course resources and cooperation opportunities from foreign universities. On the other hand, the Chinese Ministry of Education has approved about 90 Chinese-foreign cooperatively-run schools such as Xi'an Jiaotong-Liverpool University and the Chinese University of Hong Kong, as well as cooperative education institutions in Mainland China and Hong Kong, Macao, and Taiwan regions to supplement the independent admission of international students who have received admission notices from foreign universities. For example, New York University Shanghai (NYU Shanghai, 2020) will welcome approximately 2300 Chinese undergraduates and 800 Chinese graduate students from New York University and New York University Abu Dhabi this fall. These students can enjoy all the learning resources on campus. In addition, to ensure that these students have a good learning environment, NYU Shanghai also rented a building as a “temporary expansion campus.” Due to the insufficient credit recognition mechanism of Chinese and foreign universities and the limited student capacity of domestic universities, it is difficult to implement the idea of transferring international students back to domestic universities to study. It is more feasible to transfer international students to the corresponding Chinese-foreign cooperatively-run schools. At present, there are nearly 2300 Chinese-foreign cooperatively-run schools and projects at all levels approved and filed by the Chinese Ministry of Education, of which nearly 1200 are undergraduate or higher institutions and projects (Chinese Ministry of Education 2020). Therefore, many students who have obtained admission notices from foreign universities have the opportunity to transfer to Chinese-foreign cooperatively-run schools. Although the learning experience of Chinese-foreign cooperatively-run schools is not as good as real studying abroad in some aspects (such as cultural environment, teaching quality, and the experience of making friends), it is a suitable alternative for international students who do not want to postpone their admission.

3.2 China's Long-term Development Strategy on International Student Mobility

Apart from the emergency measures to reduce the impact of the pandemic, China has also formulated a long-term development strategy to promote the opening up

of education. At the two sessions (National People's Congress and National People's Political Consultative Conference) in 2020 (Xiong 2020), Premier Li Keqiang pointed out: "In the face of changes in the external environment, China must unswervingly expand its opening to the outside world." The "Opinions of the Education Ministry and other eight departments on accelerating and expanding the opening up of education in the new era" (hereinafter referred to as the "Opinions"), issued by the Chinese Ministry of Education (2020) on June 18, is precisely the specific action of this directive in the field of education. This document regards the cultivation of high-quality talents with international vision and international competitiveness as an important goal of education opening to the outside world, and international student mobility is a key way to cultivate international talents. China plans to promote international student mobility by strengthening multilateral cooperation, improving the mechanism of mutual recognition of Chinese and foreign credits, and improving the education of international students in China.

Multilateral cooperation is an important way for China to attract international students, especially the "Belt and Road" (the Silk Road Economic Belt and the twenty-first-century Maritime Silk Road) program. The "Belt and Road" program, connecting 65 countries in Asia, Africa, and Europe together, has brought development opportunities to countries along the route and at the same time greatly enhanced China's international influence as a pioneering country. In this difficult period of high economic and political instability, international interdependence will be an effective way to push the international community through the crisis (Albertoni and Wise 2021). In future, China will create an upgraded version of the "Belt and Road" education initiative and deepen cooperation with multilateral institutions such as the United Nations, the G20, Asia-Pacific Economic Cooperation (APEC), Shanghai Cooperation Organization, and BRICS (Brazil, Russia, India, China, and South Africa), thereby creating more educational cooperation platforms and channels.

Due to the differences in the admission standards, professional settings, school system arrangements, course types, and evaluation methods in different countries, the mutual recognition of credits has always been an institutional difficulty in the international exchange and cooperation of higher education. So far, except for the relatively mature credit recognition system based on the "European Credit Transfer System" between European countries, most countries have not established a direct credit recognition mechanism (Tu and Lu 2020). Under the influence of the pandemic, some international students studying in foreign universities want to transfer back to study in China or transfer to universities in other countries to study. But under the condition that the credit recognition system is not mature, they face the risk of clearing the results of previous learning. Therefore, China will encourage qualified HEIs (including Chinese-foreign cooperatively-run schools) to carry out the mutual recognition of Chinese and foreign credits and the joint grant of degrees.

In order to attract more international students, China plans to shift the education of international students from the pursuit of quantity to the improvement of quality. Although China has become the largest recipient of international students in Asia, the quality of China's current international student education needs to be improved. For example, many international students studying in China report that the international level of school management needs to be improved, and the contact

and exchanges between foreign students and Chinese students are insufficient (Gu and Teng 2020). The competition for international students is essentially a competition for the quality of education and academic advantages. Therefore, improving the quality of education for studying in China is the fundamental way to attract international students to mobility inward.

4 Conclusions and Suggestions

Under the direct and indirect impact of the COVID-19 pandemic, the scale of international student mobility has decreased, the form has changed, changes in the international landscape have intensified, and market competition has intensified. In the post-epidemic period, the countermeasures and strategies adopted by countries are crucial to changes in the pattern of international student mobility. Combining China's crisis response strategy and long-term development strategy, the following aspects should be paid attention to in promoting the mobility of international students:

4.1 Provide Support for International Students from Home and Abroad

At present, governments and HEIs should consider providing international students from their home countries and other countries with more support, such as scholarship support, enrollment expansion, and flexible admission policies. For international students in their home country, this is to help them face the uncertainties under the influence of the pandemic. For example, Singapore decided to provide about 2000 places in universities to accommodate students who would have gone abroad (Sharma 2020).

For international students from other countries, this is to enhance the attractiveness of their HEIs to international students. Although many universities are currently facing financial shortages, attracting more international students is precisely the main way to solve this difficulty. Study abroad education has entered the buyer's market. Many countries or regions have fully realized the difficulties faced by international students and tried to attract more international students by providing them with support, thereby promoting economic growth. The Australian University Alliance has launched a series of support services and assistance programs for international students, hoping to encourage international students to still regard Australia as one of the best choices for studying abroad after the pandemic (Shi 2020). The pandemic is both a challenge and an opportunity. Chen (2021) has confirmed through research that providing assistance to other countries during the COVID-19 pandemic can effectively increase international visibility and improve international impression. Countries that improve their national image and attract more international students will occupy a more important position in the field of international higher education.

4.2 Promote the Diversification of International Student Mobility

The COVID-19 pandemic has brought virtual mobility into the public's field of vision, and has also given birth to many new forms of international student mobility. After the pandemic, the advantages of both physical mobility and virtual mobility should not be abandoned. The mobility of international students can be single physical mobility or virtual mobility, or a joint teaching and degree joint program with domestic and foreign universities, or a short-term visiting project combined with Chinese-foreign cooperatively-run schools. The learning experience of international students can be a combination of online and offline teaching, a combination of domestic and foreign courses, with multi-campus learning resource services. Promoting the diversification of international student mobility can not only better meet the needs of students for international education, but also enhance the anti-risk ability of the study abroad business.

To develop more forms of international student mobility, the key is to strengthen international cooperation. HEIs need to strengthen the connection of courses, improve the system of mutual recognition and conversion of learning achievements, and broaden channels for transfers and visits.

4.3 Strengthen the Internationalization at Home

With the increasing demand for international talents, the concept of internationalization at home proposed by Bengt Nilsson in 1999 (Robson et al. 2018) has attracted more and more attention. The so-called Internationalization at Home refers to any activities related to the dimension of internationalization other than the cross-border movement of students and teachers. Its forms include course internationalization, credit transfer agreements, the establishment of cooperative networks, courses taught in foreign languages, and communication between local students and foreign students (Crowther et al. 2000). The original intention of the concept of internationalization at home is to provide an international education for students who have no chance to study abroad, and cultivate their cross-cultural understanding and international vision (Robson et al. 2018). However, with the emergence of the mixed study abroad model characterized by multi-campus study, issues such as mutual recognition of credits, the cohesion of teaching content between domestic and foreign universities, and teaching language have put forward more urgent requirements for local internationalization. The previous "2+2" study abroad model, a form of mixed study abroad, has exposed many problems. For example, the courses of domestic universities are difficult to connect with those of foreign universities, and domestic universities do not provide students with training opportunities in oral and academic writing (Liu 2016).

At present, international exchanges of students and teachers in Chinese universities are becoming more frequent, and international cooperation in the fields of teaching and scientific research is gradually deepening. Chinese universities already have the basic conditions for developing internationalization at home (Zhang and Liu

2017). However, internationalization at home is still a new thing in China. In the past, Chinese universities adopted traditional internationalization models characterized by cross-border personnel mobility, and rarely incorporated internationalization concepts into daily teaching, scientific research, and administrative work (Zhang and Liu 2017). For most Chinese people, internationalization means going abroad to receive an education. This has led to the blind worship and pursuit of education in the West (especially European and American countries) and has restricted the international development of China's higher education.

In the post-epidemic period, for international students who transfer to domestic universities to have a better international learning experience, domestic universities need to improve their levels of internationalization at home in terms of curriculum, student management, and campus cultural environment. In terms of courses, HEIs can set up international language courses, introduce high-quality international courses, highlight multicultural studies, etc. In terms of teachers, HEIs can introduce experts and scholars with multicultural backgrounds. In terms of campus life, HEIs can strengthen the contact between international students and local students and make the campus an international community. The use of information technology and the Internet to develop an international education platform is also an effective way to achieve local internationalization. The learning supermarket established by Xi'an Jiaotong-Liverpool University (Xi 2020) is a good example. It integrates global excellent online education resources and providers into the supermarket. Students can integrate online education with campus learning through the learning supermarket.

4.4 Correct the Commercialization Tendency of International Student Mobility

The survey results of the International Association of Universities (IAU 2014) in 2014 have shown that "over-commercialization" is the main risk of the internationalization of higher education. In recent years, the commercialization of international student education in many countries and universities has become more apparent. Australia is a typical example. One-third of its university funding comes from the tuition of international students (Liu et al. 2020). This is not a good phenomenon. For countries with more developed higher education, over-commercialization weakens the ability of higher education to resist risks. Under the sudden blow of the COVID-19 pandemic, those universities that rely heavily on the tuition of international students have suffered a severe economic crisis. At the same time, the over-commercialized operating model is also likely to have a negative impact on the enrollment quality of universities and damage the reputation of universities in teaching and scientific research (Bok 2003, P. 117). For developing countries, in order to improve the internationalization of higher education, they have to purchase educational services from developed countries at high prices and provide financial support for international students. The highly commercialized higher education services cannot narrow the gap in the level of internationalization of higher education between developed and developing countries. On the contrary, it makes developing countries continue to pay a high price to fill this gap.

The COVID-19 pandemic provides an opportunity for some countries and universities to reflect on their over-commercialized internationalization model, so as to find a better development model. In this process, university leaders need to uphold a long-term vision and sense of crisis, and always be alert to the deviation of universities from non-utilitarian education and academic purposes.

In short, in the post-epidemic period, countries need to grasp the changing trends of international student mobility, formulate countermeasures and long-term strategies based on their own actual conditions, and better promote international exchanges and cooperation in higher education.

Acknowledgements This research was supported by the National Social Science Fund of China for the project “Research on the development of global mobility of students facing the community of shared future” under Grant BDA180027 and the Fundamental Research Funds for the Central Universities under Grant JUSRP1806ZD.

Contributions All authors made significant contribution to the manuscript, reviewed, and approved before the submission. Final version of paper was reviewed and approved for submission by all the authors.

Funding This research was supported by the National Social Science Fund of China for the project “Research on the development of global mobility of students facing the community of shared future” under Grant BDA180027; the Fundamental Research Funds for the Central Universities under Grant JUSRP1806ZD.

Availability of data and material The datasets used or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Conflict of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

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