The COVID-19 pandemic: The watershed moment for student mobility in Chinese universities?

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Abstract

As COVID-19 drastically affects cross-border mobility, virtual mobility emerges as a viable alternative to cope with the crisis. This article reports on the integrated findings of an exploratory sequential mixed methods design to understand benefits and challenges of virtual mobility at a Chinese university and future projection of outbound student mobility. The mixed methods design used in this study is characterized by an initial quantitative phase of data collection and analysis, followed by a phase of qualitative data collection and analysis, with a final phase of integration or linking of data from the two separate strands of data. The study suggests Chinese students appreciate the flexibility and economic advantages of virtual mobility but also express concerns on several limitations. Online mobility may be viewed as a complement or alternative for Chinese institutions when the COVID-19 crisis is over. As Chinese universities are promoting internationalization at home, the number of virtual programmes available to Chinese students will surge. In this context, coupled with the stress of geopolitical instability, the growth in Chinese student mobility may be entering a period of contraction, which may exert profound impacts on a global scale.

新冠肺炎疫情严重影响了学生跨境流动。本文采用探索性顺序混合方法学设计，以问卷调查和访谈形式，对一所中国顶尖高校进行案例研究，了解线上交流优势以及存在的问题。结果显示受访者对后疫情线上交流依然表现出积极的态度。结合地缘政治形势，文章分析中国学生跨境流动的增长将进入收缩期，并会在全球范围内产生深远影响。
INTRODUCTION

Student mobility is an important indicator for the degree of internationalization. For universities across the world, the core goal of mobility is to create an international academic experience for their students. Internationally mobile students are conventionally divided into two groups. Degree mobility refers to those who relocate abroad to obtain a degree, while credit mobility means students go abroad for a ‘short-term study exchange’ (Riaño & Piguet, 2016). Through a variety of programmes, including exchange programmes and summer schools, students benefit from a rich international experience offered by mobility in terms of personal growth and career development. Meanwhile, universities are reaping the gains from the cross-border movement of students, not only by enhancing their international profile and appeal, but also by building a network to strengthen education jointly with research and innovation. As innovative application of information and communication technologies (ICT) is catalysing the changing pedagogical modes, learning is evolving from traditional face-to-face (F2F) approaches to new forms of blended and online education. New formats of mobility are emerging in addition to the physical cross-border mobility.

The COVID-19 pandemic on a global scale affects all walks of life. In education, a report from UNESCO estimates that around 1.5 billion students and 63 million teachers in 165 countries had been affected by school closures as of March 2020 (Teacher Task Force, 2020). School leaders have been rapidly mobilizing and innovating to facilitate quality distance learning for students. Apart from causing major disruptions to teaching, learning and research, the pandemic has also adversely affected many international activities of universities, most notably regarding the mobility of students and staff. As a means of preventing virus transmission, countries have closed their borders and most universities around the world have closed their campuses and supported their student learning via digital technologies. And 89% of higher education institutions have reported an impact on international student mobility with campus closures and travel bans (IAU, 2020). Study plans of students are seriously challenged by the pandemic. Study shows universities stand to lose a maximum of 32% students as they are considering not to study abroad and/or not to pursue higher degree (Studyportals, 2020). The survey by BOSSA&COSSA, China’s international education industry association, indicates that 64% of Chinese students would not change their original plans to study abroad despite difficulties, suggesting study abroad is a long-term plan for Chinese students and the overall trend of overseas enrolment will not change (BOSSA&COSSA, 2020). Studies show limited effects of the pandemic on the destination of international mobility. The survey made by UK’s Higher Education Policy Institute also shows that 79% of the applicants will not change their first-choice university (Higher Education Policy Institute, 2020).

COVID-19 also triggers a major increase in interest and activity relating to virtual student mobility. Virtual mobility is “a form of academic mobility in which students and teachers in higher education can study or teach by using digital tools and platforms without physically travelling to another higher education institution abroad.” (Buchem, 2020) By the definition of the European Commission, “it is a set of activities supported by Information and Communication Technologies (ICT), including e-learning, that realize or facilitate international, collaborative experiences in a context of teaching, training or learning.” (European Commission, 2014) These activities can take place in a fully ICT-supported environment and/or as a complement to physical mobility. Virtual mobility is remarkably facilitated through technology during the crisis. The IAU survey shows 60% of universities reported that COVID-19 has increased virtual mobility and/or collaborative online learning as alternatives to physical student mobility. This may safeguard internationalization to some extent (IAU, 2020). Leask and Green suggested that online programmes could avoid the reification of travel and open up the possibility of ‘border crossing’ for students (Leask & Green, 2020). Programmes such as virtual internships and Collaborative Online International Learning, in combination with intercultural learning encounters on campus and in local communities, offer potential to engage all students in meaningful intercultural learning on a global scale during the novel coronavirus time (Leask & Green, 2020). Altbach et al. suggest skills of teaching staff will be upgraded and learning platforms and online curricula can be improved (Altbach & de Wit, 2020). The issues and problems associated with the virtual mobility
programmes have been discussed. Access to technology in most households may vary and connectivity to high bandwidth internet or to smart phones is related to income even in middle income countries; distance learning and online mobility may remain out of reach for those without means to connect with internet (Azzi-Huck & Shmis, 2020). Another negative aspect of remote learning reported by a recent survey is related to interactions in sessions, which can be difficult if the class size is large and the students do not know each other. (UWN reporter, 2021).

China has become one of the world’s most important countries for international education. According to UNESCO statistics, China is the largest sending country of international students worldwide by far. A recent report has showed more than 710,000 Chinese students studied abroad in 2019 and 73% of them were at the higher education level (New Oriental, 2020). University reputation and rankings are found to be the most significant factors influencing Chinese students’ choice of destination (Lee, 2017). This massive outflow of international students has had an unrivalled impact on the landscapes of global higher education. The presence of large numbers of Chinese students on university campuses in Western countries is now a ubiquitous phenomenon. The expenditures and tuition fees paid by these students have become an increasingly important economic factor for universities and local economies in countries like the United States, Canada, the United Kingdom and Australia. Furthermore, elite Chinese universities provide tertiary education of increasingly higher quality. The rise of Chinese universities on global league tables has attracted broad interests. Many studies have indicated internationalization is a strong driving force behind the impressive achievements of Chinese universities, which is manifested by diverse transnational cooperative education, bilateral student and faculty mobility, and broad international research collaboration (Zha et al., 2019). After two decades of continuous surge on the outflow, the growth rate of outbound Chinese students has been slowing down in recent years (Dennis, 2016; Lloyd-Damjanovic & Bowe, 2020). Researchers have made predictions about the potential impact on many Western countries that are overdependent on the enrolment of Chinese students. The outbreak of COVID-19 posed a profound influence on many sectors and international education is among the most affected industries. Global higher education and its internationalization are experiencing the transformative effect (BOSSA & COSSA, 2020). As Chinese universities are important players in international education, the study on how they respond to the pandemic will offer key insight on the changing landscape of global mobility.

2 | INTERNATIONAL MOBILITY IN CHINESE UNIVERSITIES UNDER COVID-19

Previous studies have provided critical evidence on how international mobility is immediately affected by the pandemic. As China is the top home country for cross-border mobility, it is interesting to investigate the potential impact of COVID-19 on China’s outbound student mobility and provide a Chinese university perspective on the trend of international mobility. As mentioned above or earlier, the outbound mobility of students includes two types (short term exchanges and degree studies), but we only focus on the former in this study for two reasons. First, the number of students involved in this kind of credit mobility is much larger than those in degree mobility at Chinese universities, as shown by the data from five of the top 10 Chinese universities (Table 1). Second, Chinese universities make hard endeavours and exert strong administrative influences on the design and execution of exchange mobility. The study on how the crisis impedes the credit mobility of Chinese students would offer unique information about the trend of outbound student mobility. Before the pandemic, physical credit mobility implemented in Chinese universities is straightforward. It is usually organized between a home and a host university for a study period of weeks or months under a collaborative framework. To mitigate the disruptive impact of the crisis on international education, virtual mobility seems to be a common approach adopted globally since the outbreak of COVID-19. However, findings of the significance of this new mobility format from a Chinese perspective are relatively scarce, which remains the major incentive for this study.
The coronavirus pandemic has been an unprecedented event with destructive effects on both people and economics. However, it provides a unique opportunity for virtual mobility. This study examines how Chinese students with virtual experience think of it and their perceptions of the future preference for studying abroad. Both qualitative and quantitative strands of data are collected in one of the most prestigious Chinese universities and analysed sequentially. Two research questions are under investigation: (1) will virtual mobility remain an option for global learning experience for Chinese students after the pandemic? (2) is pandemic a watershed moment for outbound mobility in Chinese universities?

Analysis on the feedback shows the co-existence of virtual mobility with physical mobility will be part of the “new normal” in the post-pandemic world. The trend of outbound mobility and its implications for internationalization of Chinese universities is discussed.

### Research Design

To address the research questions proposed, the study engaged with a case study approach (Devare, 2015; Merriam, 1998; Stake, 1995; Yin, 2002). Case studies make it possible to deeply understand the context in which a solution is implemented, and to theorize the relationships between programmes, factors, and students from evidence. A prestigious Chinese university with strong international standing was selected as the Case university. It is a comprehensive and research-intensive university in China and included in the State supported “Double First-Class Initiative”. Located in an economically developed region, Case university is in the top 5 league table of China and well recognized as one of the most international Chinese universities. Its current enrolment is over 60,000 students with the ratio of undergraduate students to graduate students close to 1:1. With a proactive global outlook, Case university is keen on developing international mobility programmes with its partners across the world. Since 2009, Case university has been focusing on internationalization to improve its national and international standing. In 2017, it announced its global strategy to make a more distinctive and positive impact on higher education arena. Student mobility is one of the key indicators for internal performance assessment for the internationalization of its colleges or schools. More than 7000 students were internationally mobile in 2019. Two transnational education institutes are jointly established with two international partner universities, one from the UK and the other from the USA. Case university exemplifies the persistent efforts of Chinese universities for internationalization. After the outbreak of COVID-19, Case university changed swiftly to online classes. Over 200 smart classrooms that completed their renovation right before the pandemic contributed enormously to the swift transition. More than 9000 students participated in a diversity of virtual mobility programmes, such as online classes, conferences and virtual tours during the year of 2020. Therefore, Case university provides a contextual setting for the researcher to observe respondents’ experiences and understandings to address the research questions proposed here.
To answer research questions, the present study employed a mixed methods research design (Creswell & Creswell, 2018). This mixed methods study adopted an independent sequential design with a result point of integration. Students volunteered to participate in the study; they received no compensation in the form of material rewards or study credit. Anonymity and confidentiality were guaranteed throughout the whole process. The following sections describe the methods used in the quantitative and qualitative parts of the study. The quantitative part was a multi-item survey study and the qualitative part was a narrative interview study. In particular, surveys could be used to measure the satisfaction levels of students while interviews could be used to ask in-depth questions about their experiences and reactions. The first phase assessed the attitudes and behaviours of the students in Case university regarding virtual mobility, and the second phase explored these concepts in depth to give meaning to the numerical data and further identify perceptions of virtual mobility.

Quantitative data in phase one was collected in May, 2021. The survey measured the following dimensions: overall satisfaction of virtual mobility; factors related to students' satisfaction; limitations of virtual mobility; attitudes and behaviors towards future virtual programmes. Participants' demographic characteristics, such as areas of study, gender, and educational level, were collected as part of the survey. The survey was deployed to students in Case university who participated in virtual mobility during the 2020–2021 academic year in an attempt to derive a general opinion. A total of 500 respondents completed the survey. Informed consent was obtained from all participants. Survey data were analysed using SPSS version 22 for descriptive and inferential statistics. More specifically, descriptive statistical analysis was conducted to describe the sample with regard to personal characteristics, overall satisfaction of virtual programme, as well as intention for future virtual mobility. Inferential statistics were employed to examine the effects of gender, level of study and areas of study of participants on the response to virtual mobility when statistical significance can be achieved.

In phase two, data were collected from June to July 2021. The researcher was not known to participants prior to the data collection. The qualitative interview schedule comprised of five broad topic areas, which included questions on the participants' experience of virtual mobility; whether they would seek to study abroad in the future and why; their intended destinations and why, as well as the institutional level of internationalization. The interview schedule was informed by the literature and quantitative phase of the study. Data were collected via telephone interviews which were audio recorded and online chat applications with field notes being taken. The interview data were analysed following the procedures of Mayring's (2014) qualitative content analysis. Common themes and categories are identified to help understand students' perception of virtual mobility and future study abroad plan. Single sentences and sentence fragments were used as the coding units, and individual interviews were taken as recording units. There are three steps in the qualitative content analysis. In the first step, sentences and sentence fragments from individual interview transcript were processed to remove redundant information and retrieve content-bearing text material. In the second step, single words or text fragments were interpreted and contextual analysis was applied to those that needed explication using lexical- grammatical definitions and additional interview material. In the third and final step, a category system was developed and extracted from the summarized and explicated interview material from all ten interviews.

To categorize a study as 'mixed methods', both qualitative and quantitative data need to be integrated or linked through data transformation between phase one and two (Ivankova et al., 2006; Toyon, 2021). The data from phase one informed the development of the interview schedule utilized in phase two, and the results from both phases were analysed in parallel, and integrated to explore patterns, similarities and differences within and across the data in relation to participants' awareness, knowledge, and perceptions of virtual mobility.

4 | RESULTS AND DISCUSSIONS

As reported, over 60% of higher education institutions around the world increased their virtual mobility provision during the pandemic. It is also true for Chinese institutions in which virtual mobility programmes were hardly
conducted before the outbreak. Virtual mobility suddenly gains great momentum as physical mobility, the predominant format, is completely halted due to campus closures and visa restrictions.

4.1 Benefits and challenges of virtual mobility

Case university is a national university offering a wide range of programmes. Quantitative survey participants of diverse disciplines were invited from across the campus, with STEM students representing 65.6% of the survey respondents and social sciences and humanities representing 34.4% (N = 500). Students in the STEM represented 60% of the interviews (N = 10); the remaining students were from the social sciences and humanities. Descriptive statistics comparing these samples can be found in Table 2. The demographic profile of the surveyed respondents reflects that of the general population of Case university.

With the rapid development of ICT, the need to embrace the potentials of remote, digital learning has been noticed even before the pandemic. The European Commission had announced plans to introduce more flexible mobility formats for its next framework programme, introducing the concept of “virtual mobility”. The survey about Erasmus+ Virtual Exchange initiative in year 2018–2019, which gave almost 19,000 participants an access to virtual mobility, reports that 88% of them agreed that virtual exchange had a positive impact on their ability to work in a culturally diverse place and 91% described what they learned about people from other cultures as positive or very positive, of which 31% reported a clear change from their previously held beliefs (European Commission, 2019). Before the outbreak, Case university, as well as Chinese university in general, did not consider establishing virtual mobility and their students generally made physical cross-border movement for international experience. COVID-19 has made Chinese university realize the great potential of virtual mobility.

Figure 1 shows a graphical representation of the mean estimates of responses of three key survey questions, indicating that the level of satisfaction about interactions was rated consistently lower (below 3.50) compared to overall satisfaction of virtual mobility and intention for future programmes (both above 3.50). An independent samples t-test was used to compare the mean scores of these three questions by students in different demographical groups. No statistically significant difference was observed in regard to different gender and level of study. Interestingly, students studying STEM showed a stronger intention for future virtual programmes than those in Social Sciences and Humanities (Mean score: 3.91 vs. 3.70, p < .05). Responses to interview questions were clustered into two main categories: satisfaction of virtual mobility, future study abroad plan.

| TABLE 2 The demographic profile of the survey respondents and interviewees |
|---|---|---|
| **Areas of study** | **Populations** | **Quantitative** | **Qualitative** |
| STEM | ~50,100 | 328 | 6 |
| Social Sciences and Humanities | ~16,600 | 172 | 4 |
| **Level of study** | | | |
| Undergraduates | ~29,200 | 426 | 5 |
| Master students | ~23,700 | 39 | 2 |
| Doctoral students | ~13,800 | 35 | 3 |
| **Gender** | | | |
| Female | ~28,900 | 252 | 6 |
| Male | ~37,800 | 248 | 4 |
Table 3 presents the category system. The first main category, satisfaction of virtual mobility, contained three subcategories: cross cultural environment, connectivity and flexibility. Participants articulated their wish for a more cross-cultural environment during the virtual mobility sessions. As an immediate solution to the completely halted physical mobility in the crisis, virtual mobility programmes were organized swiftly without elaborate considerations on the design. The programmes mostly involved an international instructor and a group of Chinese students, similar to the lecture given to a large number of audiences. Although some students articulated that they were in favour of knowledge-centred instruction, other students argued that they wished to include diverse cross-cultural elements, such as engaging students from a wider range of destinations, including those from host university. As one interviewee put it,

I don't mind having a lecture style program but sometimes I would have liked a bit more cross-cultural environment.

| Main category                          | Sub category         | Anchor example                                                                 |
|----------------------------------------|----------------------|--------------------------------------------------------------------------------|
| Satisfaction of virtual mobility       | Cross cultural environment | "Intercultural learning and experiences can be further improved." |
|                                        | Connectivity         | "Poor Wi-Fi connections really affect the experience of virtual programs."       |
|                                        | Flexibility          | "I enjoyed the huge benefits of flexible learning, with lecture recordings proving helpful for note-taking and scheduling learning around other aspects of life." |
| Future study abroad plan               | Physical mobility    | "After the crisis, I prefer to participate in physical mobility programs."      |
|                                        | Higher degree        | "Yes, I plan to get a higher degree overseas."                                |
|                                        | Global competency    | "Mobility programs help to improve skills needed in global competition."       |
|                                        | Difficulties         | "My parents have big safety concerns."                                       |
According to what is collected, 50% of the interviewees were keen on a more diverse cultural environment. In addition, many participants expressed explicit preference for physical mobility. As one of them put it, 

"For me, when the border is open, I want to have physical exchange experience."

For future study abroad plans, interviewees—particularly in the STEM-related programmes—decided on pursuing a higher degree, mostly doctorate level, in overseas universities.

Combining the results from both the qualitative and the quantitative phases provides a detailed understanding of how these Chinese students perceived virtual mobility. The quantitative research respondents were directly asked to rate the level of their satisfaction with virtual mobility programmes, while qualitative participants were prompted to discuss the challenges of participating in this new form of mobility. In line with the findings related to intentions of future participation, approximately 54% of the survey respondents (N = 500) indicated their willingness for continuous participation in virtual mobility even when the ban on mobility was lifted. The advantages of lower costs, wider access and greater flexibility are the main underlying reasons. In terms of challenges, qualitative research participants were more likely to focus outward on the lack of cross-cultural environment and technology-related issues—in particular, internet connection speed—while quantitative survey respondents were more likely to focus inward on organizational issues, such as learning efficiency, interactions between students and with instructors, and pressure of coping with time difference.

As an alternative to enriching educational experience, virtual mobility equally aims to offer students the opportunity to improve international competences and develop intercultural skills that are essential in a globalized world. Therefore, interactions between virtually mobile students and host university peers, instructors and surrounding environment of host universities are important factors contributing to satisfactory learning experiences. Evidence from both the qualitative and quantitative strands confirms a general lack of interactions and support in the virtual programmes. Close to 50% of the respondents in the survey prefer to have more interactions either between the fellow students or with the programme instructors. Almost 80% of the interviewees expressed the same opinions. In traditional mobility programmes which require physical presence, host universities responsible for the learning arrangement and living on campus or in town would provide sufficient support to students in the programmes, while home universities would have limited interventions on these processes. However, the collaborative nature of virtual mobility programmes requires both home and host universities work together on the design, execution and supporting mechanism to ensure the overall satisfying experience of students, which has not been fully recognized by Chinese universities. In all virtual mobility programmes that the interviewees attended, local supporting staff from the Case university were unavailable, who otherwise could facilitate more interactions in the programme or assist in solving technical problems students encountered.

### 4.2 Motivation of physical mobility remains strong

A major benefit of student mobility is the invaluable exposure it offers to different pedagogical approaches and intercultural learning. However, this depends largely on the physical presence of and active engagement with fellow students and teaching faculty in host universities. For Chinese students, international mobility experiences are important in several aspects, such as fostering personal development, enhancing employment prospects, polishing second-language skills, and satisfying university requirements on international education, etc. Independently, both strands of data indicate that respondents would like to take the option of physical mobility if available. In the quantitative survey, 20% of the students decided not to take virtual mobility anymore and about 30% are uncertain about it. Eight interviewees also preferred studying abroad in person and considered cross-cultural experience in physical mobility as one of the unmatched benefits of the classical format. Therefore, as a sustainable post-COVID internationalization effort, the virtual parts of mobility programmes may be viewed as a complement
or alternative rather than core elements in Chinese institutions. Profound impacts on student mobility were found in the study; however, COVID-19 is not a watershed moment yet as the intention for physical mobility remains strong.

Chinese universities are at the early stage of embracing this new form of mobility. However, the situation may change as more efforts are devoted to addressing current problems in virtual mobility. Universities can do more on the basics, including Wi-Fi (on campus and elsewhere), reliable hardware and software, and course arrangement. It is important to make virtual sessions more interactive. More opportunities should be created to involve conversations or discussions with instructors and fellow learners, as well as give timely individual and group support. With improved learning experiences and unique advantages offered by virtual programmes, more Chinese students will be likely to engage in this new approach.

4.3 | Chinese student mobility may undertake a trapezoid-shaped developing mode

The OECD (2020) uses ‘the number of international tertiary students enrolled as a proportion of the total tertiary students enrolled in the destination (host) country’ as an indicator for mobility. Accordingly, the OECD (2020) notes that ‘international students are those who received their prior education in another country and are not residents of their current country of study.’ Their data indicate the scale of international student mobility is exaggerated worldwide. However, the lagging growth of international Chinese student enrollment has been observed before the pandemic, which could be attributed to the following reasons.

Improved tertiary education quality and transnational education programmes attract more Chinese students to pursue higher degree in China, thus reducing the number of Chinese students in pursuit of degree overseas. International student mobility to some popular destination countries is further hindered by the tightening of visa policies and increase in racial discrimination (Riaño et al., 2018). There is also an increasing number of restrictions in the fields that international students can study, particularly in STEM, as a way to protect national interests (Joske, 2019). Furthermore, the strong anti-immigration tone of events in the United States and the United Kingdom is elevating, which has a negative impact on students’ sense of security, availability of post-graduation work and immigration opportunities (Najar & Saul, 2016). Against this background, Chinese students have concerns about the state of their safety and well-being abroad. Qualitative strand of data supports this conclusion when the interviewees were asked about their future study abroad plan. They all acknowledged potential positive impacts on their technical, interpersonal and intercultural skills through international mobility. However, some of them (20%) consider pursuing higher degrees in China because of its improved quality of tertiary education. And 30% said they worried about current social environment of destination countries. Another interesting point arising from the interview was related to future career development, such as establishing personal academic networks within the country. According to the undergraduate placement reports in the Case university, around 17% of 2020 class graduates studied abroad for higher degrees, which is lower than 21% in the year of 2019. This ratio has been decreasing for four consecutive years.

Many Chinese universities pay greater attention to internationalization at home (IaH), which is seen as an important means to enhance their capacity and global profile (Yuan, 2011). Through virtual mobility, international educational resources are introduced to Chinese universities and help improve overall internationalization. It is expected that virtual mobility will become an effective approach to IaH in Chinese universities. For example, it can establish new types of international partnerships with institutions in countries previously not considered for a physical movement due to conflict-ridden political situations. It can also be an effective means of fostering deeper collaboration with existing partner institutions. Previous study on students’ participation in study abroad and IaH activities across nine large public universities in the United States suggested that students’ participation at IaH might yield greater perceived benefits than study abroad for students’ development of global, international, and intercultural competencies (Soria & Troisi, 2014). As more virtual mobility programmes will be developed by
Chinese universities, increasing number of students will take this option to enrich their international academic experience without leaving the country, which may inevitably lead to a decrease in students for credit mobility. In light of this, the growth of outbound student mobility is bound to reach a plateau in the near future. In the long term, the overall number of outbound Chinese students is likely to face a downward pressure, which may pose outsize influence to countries heavily relying on Chinese students’ enrolment (Ho et al., 2021, WENR, 2019) and therefore lead to profound impact on international education on the global landscape.

5 | CONCLUDING REMARKS: IMPLICATIONS FOR HIGHER EDUCATION INTERNATIONALIZATION

The global socio-political and socio-economic landscapes have undergone great shift in recent few years, which triggers growing debates with regard to the trend of internationalization of higher education. Questions about the value and benefits of international education have been arising across the globe. Many studies have predicted the direction and the demands for international students will continue to face intense change. The sudden outbreak of the COVID-19 pandemic further augments tremendous pressures on international education. The study introduces a new dimension of outbound Chinese student flow, i.e., virtual mobility, into consideration, in addition to the financial, political, or societal factors. Deliberately, students who participate in a virtual mobility programme are provided with an opportunity to learn from foreign teachers or fellow students. They get access to an alien study environment, interact in a foreign language, and work together with peers on a common project or topic without leaving their home country. This kind of mobility barely existed in Chinese universities before 2020. Our results indicated there is a high possibility that Chinese students will be mobile virtually after the pandemic. With this new mode in the picture, outbound numbers of students may experience certain degree of fluctuations. Therefore, it is important to investigate the implications of emerging trend of virtual mobility of Chinese students from institutional, national and global perspectives.

For many Chinese institutions, internationalization remains as a strategic policy priority in getting on to the world-class university league tables. The strong impact of digital revolution on the university, especially with regard to digital learning, is well exhibited before the pandemic and further strengthened by this unprecedented challenge. Engagement with overseas partner universities will stay active to provide an international academic experience for students by collaborative teaching and learning and may become more frequent with the support of ICT. Considering various benefits that virtual mobility brings and potential strong demand from their students, Chinese universities will keep embracing this new addition in parallel to the “classical” physical mobility scheme after the pandemic. More attention will be paid to the development of technical platforms and strong local support system to enhance the quality of the learning experience through virtual mobility, as indicated in our survey. As home and host universities are equally important to bring good experience to students in the virtual mobility programmes, more in-depth cooperation will be expected and new collaborative opportunities will arise, such as designing novel cooperation models for virtual or blended exchange programmes, establishing good practices, and exploring the potentials of virtual schemes of international education.

After 40 years of development since the opening-up policy, the quality of Chinese higher education caught up quickly in the global rank and China has been thriving as one of the regional education hubs as indicated by its status as the third-largest destination for international students (UNESCO, 2020). Before the COVID-19 crisis, domestic transformations in Chinese higher education and rising geo-political tensions have raised concerns about the future scope of outbound student mobility from China. The development of virtual mobility will be another variable that may contribute to this changing map. With China actively implementing its internationalization and capacity building strategy, virtual mobility programmes will inevitably become an integrated component of IaH plans owing to several associated benefits. At the national level, state policies will keep encouraging the opening-up of higher education, including promoting student and academic mobility, international research
collaboration and transnational education (referred to as China-foreign cooperative education). There will be more opportunities for Chinese students to obtain international education without leaving the country. Similarly, virtual programmes may be an effective approach to attracting more international students to study in China. At the global level, economic contributions of the outflow of Chinese students to host countries have been well recognized. For institutions relying on tuition revenue from international students, in particular those in the USA, the UK and Australia, delocalization to China would be a strategy to consider. Future development in transnational education will likely see an increase in the establishment of overseas campuses and university-level collaborative programmes in China as a way to serve outbound domestic students and international students looking for new destination opportunities.

A number of limitations of current study should be acknowledged. An online survey was used to evaluate the overall satisfaction of online mobility, which may have led to short or incomplete answers to the open-ended questions. The respondents might not have given enough thought to the questions, thus limiting generalizability. This drawback was partially overcome by individual interviews, which provided more detailed insights on long-term arrangements of the students. However, due to the overall study plan, the number of interviewees was small and demographic and academic backgrounds were not fully taken into consideration. A larger sample would allow for future research to investigate the potential impact of some variables, such as areas of study, year in the university, or previous experiences of online learning, on their perceived decisions. Another limitation of the study is that the data were collected from one elite comprehensive, research-intensive Chinese university. Regional gaps within China and disparities between different types of universities were not fully taken into consideration. In a study on 1264 students from 39 higher education institutions in Beijing, Ma and Yue (2015) argued that students from “the Project 985” universities (elite research universities in China) had more opportunities to participate in internationalization activities. In this sense, the findings from this study may be more relevant to elite Chinese universities. It is valuable to include more types of Chinese universities to uncover broad understandings of future trends of outbound mobility, and provide interesting directions for future research studies.

CONFLICT OF INTEREST
No conflict of interest to be declared.

DATA AVAILABILITY STATEMENT
The data that support the findings of this study are available from the corresponding author upon reasonable request.

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**SUPPORTING INFORMATION**

Additional supporting information may be found in the online version of the article at the publisher’s website.

**How to cite this article:** Li, M., & Ai, N. (2022). The COVID-19 pandemic: The watershed moment for student mobility in Chinese universities? *Higher Education Quarterly, 76*, 247–259. https://doi.org/10.1111/hequ.12383