Implementation of the Hanyu Shuiping Kaoshi and Its Home Edition During the Covid-19 Pandemic : A Survey of European Test Centres

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Original Research Article

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Abstract
The Hanyu Shuiping Kaoshi (HSK) test is a standardized Chinese language proficiency test targeting non-native speakers. Compared with other Chinese proficiency tests, the HSK has the largest test population in the world and has attracted the most academic research. This article examines how the HSK was carried out during the Covid-19 pandemic and the issues facing home-based HSK test, the so-called HSK Home Edition. The results of a primary survey showed that the majority of test centres in Europe opted to implement the traditional paper-based format of the HSK during the Covid-19 pandemic, despite the availability of the HSK Home Edition. Concerns related to technical and security issues were among the major factors that hindered successful implementation of the Home Edition. Of the test centres that utilised the Home Edition, they rated their overall experience as satisfactory. This finding suggests that concerns relating to technical and security issues associated with the adoption of the Home Edition may be less daunting than anticipated. Additional training for test centre staff could improve the implementation of the Home Edition.

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Introduction

The Chinese language is increasing in importance worldwide. The Hanyu Shuiping Kaoshi (HSK) test is a standardized Chinese language proficiency test targeting non-native speakers, such as foreign students and heritage speakers of Chinese, that provides certification for various levels of Chinese proficiency. In addition to the HSK, there is a Hanyu Shuiping Kouyu Kaoshi (HSKK) test, assessing oral skills (i.e., proficiency in speaking Chinese) separately. Chinese Testing International, a company supported by the Chinese government to carry out Chinese language assessments worldwide, currently administers both the HSK and HSKK tests.

The HSK test was created in the 1980s. Since then, waves of reform have expanded the capacity of the HSK to meet the diverse needs of its test takers (Peng et al., 2021; Su & Shin, 2015; Teng, 2017), and the HSK has established itself internationally as an authoritative standardized Chinese test that is taken by students in countries worldwide. Compared with other Chinese proficiency tests, such as the Youth Chinese Test, the HSK has the largest test population in the world and has attracted the most academic research. According to Chinese Testing International's website, in 2021, there were 1208 test centres in 155 countries or regions worldwide, serving 30 million Chinese learners. Some researchers (e.g., Xie, 2018) have used the number of HSK test centres as a proxy to evaluate China's cultural influence in the world. Since 2010, an Internet-based test (iBT) version of the HSK has been available, although it has not yet been adopted by all test centres (Confucius Institute E-Learning Centre Website, 2021). The Confucius Institute at the University of Manchester has been using the iBT since 2011 (Confucius Institute at the University of Manchester Website, 2021).

In April 2020, shortly after lockdown measures had commenced in most European countries during the Covid-19 pandemic, Chinese Testing International launched the HSK Home Edition to enable individuals to take the test online at home and use the results to apply for studies or jobs. According to Chinese Testing International, they consulted other international standardized language tests, such as the International English Language Testing System (IELTS), when creating the HSK Home Edition. Chinese Testing International reported that by the summer of 2020, 150 test centres in 54 countries (e.g., Spain, Russia) had implemented the HSK Home Edition (Chinese Testing International Website, 2021). Prior to implementing the HSK Home Edition, test centre staff were trained how to implement the test remotely, and test-takers were informed how to set up an appropriate testing environment in their homes. This included using a computer running Windows 7/10 (the Mac operating system was not supported), with a screen resolution of 1366×768 or higher, network bandwidth of 20 M and speed of 150 KB/s or higher. In addition, the computer had to be equipped with a high-definition camera, and the test had to be taken in a well-lit room to ensure clear camera images.

As the HSK Home Edition is relatively new, there has, as yet, been no academic literature on the actual implementation of it. However, several commentaries or reviews have focused on how the Covid-19 pandemic impacted on language tests and their implementation during the pandemic (e.g. Clark et al., 2021; Green & Lung, 2021; Isbell & Kremmel, 2020; Muhammad & Ockey, 2021; Ockey, 2021; Ockey et al., 2021; Papageorgiou & Manna, 2020). Among these, Papageorgiou and Manna (2020) commented on the impact of the pandemic on the implemenation of the Test of English as a Foreign Language (TOEFL) iBT Home Edition, the world's foremost English-language test. Both the TOEFL iBT Home Edition and HSK Home Edition aim to provide identical tests to the versions administered in test centres. Thus, the scores obtained in the Home Editions should be as trustworthy as those obtained in tests taken in test centres. However, administering tests in home-based online environments versus offline test centre environments poses a number of challenges. These include ensuring score compatibility of the online and offline versions and addressing security and technical issues. As many reviews and commentaries have already comprehensively addressed these issues (e.g., Clark et al., 2021; Green & Lung, 2021; Isbell & Kremmel, 2020; Muhammad & Ockey, 2021; Ockey, 2021; Ockey et al., 2021;

Papageorgiou & Manna, 2020), we do not focus on these in the present paper. Instead, our focus is on the responses of the test centres to the HSK Home Edition and the myriad challenges that the home-based version of the test pose for test centres. Given the importance of the implementation of the HSK Home Edition during the pandemic, it is vital that practical and operational challenges are considered. Thus far, no published studies have focused on operational aspects of the HSK Home Edition. Although Chinese Testing International offered HSK Home Edition to all test centres, many were unable to adopt the new online home-based versions immediately, for a variety of reasons. The responses of the test centres warrant investigation, as they can help to shed light on the potential viability of the HSK Home Edition going forward.

As might be expected, since its launch, Chinese Testing International has published several press releases via various media platforms commending the success of the HSK (Home Edition). Yet, as the leader of a HSK test centre in Europe, I am aware of many challenges that may hinder the successful implementation of the Home Edition. The aim of this paper is to provide a comprehensive overview of practical and operational challenges associated with test centres implementing the HSK and its Home Edition during the Covid-19 pandemic, focusing on centres in European Union (EU) and non-EU countries. Although only test centres in Europe were included in the survey, the findings can provide an indication of the challenges that test centres worldwide face in implementating the HSK Home Edition.

The remainder of the paper is organized as follows: The next section presents a literature review of language proficiency tests during the Covid-19 pandmic and proposes a conceptual framework. This section is followed by the research methods and data section. The results of the data analysis are then presented and discussed. The paper concludes with recommendations aimed at helping test centres to overcome practical and operational challenges associated with the HSK Home Edition.

Literature Review and Conceptual Framework

The technology for creating online home editions of language assessments traditionally held offline in test centres existed before the Covid-19 pandemic. Issues relating to the implementation of home editions began to be discussed in the academic literature after the commencement of the Covid-19 pandemic (e.g., Clark et al., 2021; Green & Lung, 2021; Muhammad & Ockey, 2021; Ockey, 2021; Ockey et al., 2021; Papageorgiou & Manna, 2020). As of spring 2022, although there were a number of published studies on home editions of language assessments, most of these studies focused on English language tests (e.g., Clark et al., 2021; Green & Lung, 2021; Muhammad & Ockey, 2021; Ockey, 2021; Ockey et al., 2021; Papageorgiou & Manna, 2020). Only one study has focused on both English and non-English language tests (Isbell & Kremmel, 2020). In addition, for the most part, the literature published thus far is made up of short papers, offering reflections on practical issues that faced test designers and test organizers at the beginning of the pandemic. Among these, Ockey et al. (2021) and Green and Lung (2021) focused on issues relating to administering English tests during the pandemic in the U.S. and discussed various challenges facing administers in this regard. Ockey et al. (2021) did not focus on home-based English tests but on the implementation of tests on campus during the pandemic. Green and Lung (2021) discussed their experiences of implementing home-based Englist tests. Thus far, no study has focused solely on Chinese proficiency tests. The present paper aims to fill this research gap by focusing on the HSK Chinese language proficiency test and surveying a large number of test centres (i.e., all HSK test centres in Europe). By incorporating the views of a wide range of test centre administrators, we hope to shed light on the complexity of implementing HSK and its Home Edition during the pandemic.

Based on a review of the existing literature, regardless of the type of language proficiency test, it is clear that test designers and test centre administrators experienced great difficulty in

determining the best course of action in terms of the implementation of offline versus online tests at the start of the Covid-19 pandemic, with all potential options having both advantages and disadvantages (Clark et al., 2021; Green & Lung, 2021; Ockey et al., 2021). Many issues raised in relation to online home-based language tests during the pandemic had not been considered previously (Clark et al., 2021). Based on the literature, there are three main challenges associated with online home-based language proficiency tests: test score reliability, test security versus test-taker privacy and test fairness (Muhammad & Ockey, 2021; Papageorgiou & Manna, 2020). Although the present paper focuses on implementation of the HSK Home Edition test, the empirical evidence shows that Chinese proficiency tests faces similar challenges to those experienced by other language tests. These three dimensions of challenges can be seen as a basic conceptual framework in this paper.

The first dimension of challenge is the reliability of the test and its scores. This is a challenge faced by all test designers. Regardless of the type of language proficiency test, test designers need to ensure that the scores obtained in online home-based versions of tests are as valid as those obtained using traditional paper-based tests in test centres. Various methods, such as specific algorithms and secure transmission protocols, are used to help ensure the validity and reliability of home-based online tests (Muhammad & Ockey, 2021; Papageorgiou & Manna, 2020). Such algorithms and secure transmission protocols are needed not only to ensure test score reliability but also to prevent malpractice (i.e., cheating) among test-takers. Ultimately, preventing malpractice requires some level of monitoring from either the test designers or the test organizers or both. The latter gives rise to the second challenge facing home-based versions of language proficiency tests: security versus privacy.

All home-based language proficiency tests employ methods aimed at preventing malpractice among test-takers. As shown by the literature (Isbell & Kremmel, 2020), irrespective of which security or test-proctoring method is used, invading the privacy of test-takers remains a concern. Potential security methods include the use of a mirror or a webcam showing the room/environment in which the test is taking place at home. These are less instrusive methods. A more intrusive one might involve installing proctoring software or synchronous video-based human proctoring. Besides personal privacy issues associated with the use of proctoring software or technology, an additional issue that needs to be considered in relation to home-based language proficiency tests is whether test-takers have the appropriate infrastructure (i.e., Internet access and computer operating systems) to install and use test tools. As Isbell and Kremmel (2020) rightly pointed out, technology requirements are among the most pressing concerns facing home-based tests. The latter gives rise to the third challenge: test fairness.

Regardless of the presence of a pandemic, home tests can be convenient for test-takers who do not live close to test centres or those who cannot travel to test centres for various reasons, such as lacking sufficient means to travel to test centres. Considered in this light, home-based tests may help solve the problem. On the other hand, if test-takers do not have an appropriate infrastructure at home to undertake home-based tests, the issue of lack of fairness still arises. The last dimension of challenge is perhaps more pressing for potential test-takers in the sense that they have to consider available financial resources when deciding whether to do home-based test or travel to test centres to do it (Muhammad & Ockey, 2021).

Materials and Methods

The main method used in this study was survey analysis. A secondary method was the use of qualitative interviews with non-randomly selected teachers and students to verify the results of the survey. All the test centres surveyed in this study were located in Europe. Although Chinese Testing International should be the authoritative provider of information on HSK test centres, the

information on its website was incomplete or out of date. Thus, to compile a list of HSK/HSKK testing centres in Europe (both EU and non-EU states), we also searched two other websites: DigMandarin (2021) and the China Education Centre (2021). The search yielded a list of 198 test centres in Europe. Figure 1 shows the geographic locations of these centres. The research assistant sent email invitations to all these test centres during April and May 2021, asking them to participate in a survey. The administrators of four of the centres answered, via email, that they had not organised any tests, although they had signed agreements with Chinese Testing International to serve as test centres. They noted that they were preparing to run the test in the future. Thus, we assumed that 194 test centres, or maybe fewer, were currently managing the HSK/HSKK tests in Europe.

The test centres were briefed about the purpose of the survey via email before being asked to complete a questionnaire. Completing the survey was voluntary. Completion of the survey normally took about 10–15 minutes. By May 27, 2021, the administrators of 87 test centres had responded to the survey. Thus, the response rate was 43.9%. The questionnaire was composed of three parts and included 13 questions (see Appendix). The first part ($n = 10$ questions) related to the particular test centre's experience in conducting HSK and HSKK tests, both before and during the pandemic, and asked questions about the versions used (e.g. paper test in an offline venue, online test in an offline venue or the online Home Edition) and the number of test-takers. The second part ($n = 2$ questions) explored the respondents' (i.e., test centre administrators') opinions of the Home Edition. Test centres that had not implemented the Home Edition were encouraged to answer these questions based on their understanding of the home-based version of the test. The third part simply contained a question about the European country in which the test centre was based. The survey was anonymous in nature. Respondents followed a hyperlink to fill out the questionnaire online. The last question helped us to understand the geographic location of the test centres even though we cannot know whom from which test centre has responded to the questionnaire. After data collection, standard descriptive statistics were used to analyse the data.
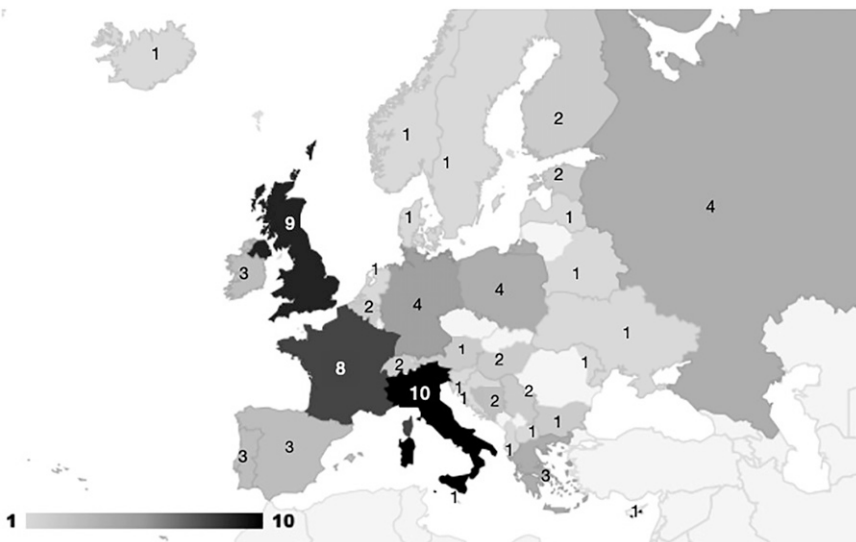
Figure 1. Geographic distribution of European HSK/HSKK test centres included in survey Numbers indicate the number of test centres. The more test centres in one country, the deeper the colour of the country. Source: Data organised by author and research assistant.

After the survey analysis, qualitative interviews were conducted with three Chinese language teachers based in Hungary, Poland and the United Kingdom and three test-takers based in Italy, France and the United Kingdom. These interviewees were not randomly selected. They were contacted by one of our research assistants who knew these interviewees and obtained their permission to share their views. These interviews focused on the experiences and perspectives of the interviewees of the traditional paper-based and online home-based version of the HSK test. The number of qualitative interviews conducted was small. The purpose of the interviews was to enrich understanding of the implementation of HSK tests that may not be well captured by surveys. In addition, as the surveys were completed by test centre administrators, the interviews could be used to cross-validate the views of these administrators with those of language teachers and test-takers. Overall, the views of the interviewees and the concerns they expressed were similar to those of the administrators of the test centres.

Results and Discussions

### Traditional tests in offline venues and the Home Edition were popular during the pandemic

During 2020, the first year of the Covid-19 pandemic, more than half of the test centres that responded to our survey (n = 48, 55.2%) delivered traditional paper-based tests in test centres. Responding to an open-ended question in the survey, some of the respondents confirmed that they had the required conditions to continue to offer the traditional test during the pandemic. At the same time, however, a large number of the European test centres (n = 39, 44.8%) were capable of delivering the HSK Home Edition and offered this to test-takers. Offering the online test in an offline venue was not popular, with only 10 of the test centres (11.5%) offering this option. Another 10 test centres (11.5%) did not offer any tests at all during 2020.

In 2021, similar to 2020, more than half the European test centres (n = 55, 65.5%) that responded to our survey offered the traditional paper-based tests in test centres. There was a slight increase in the number of test centres offering the traditional paper-based tests in 2021, up from 48 to 55 test centres. In response to an open-ended survey question, the test centre respondents indicated Covid-19 cases had fallen or that the disease was under control in their countries and that the test centres were better prepared than they had been in 2020 to offer traditional paper-based tests in a safe environment. As in 2020, in 2021 a considerable number of the test centres (n = 40, 47.6%) offered the HSK Home Edition, and this was the second most popular approach among the test centres. Only a small number of the test centres (n = 12, 14.3%) offered the online test in an offline venue. Of the 87 test centres that responded, only three centres (3.6%) offered no tests at all in 2021.

Overall, the situation in 2021 showed that the number of test centres that were not organising any tests had decreased. In the second year of the Covid-19 pandemic, the majority of test centres offered the HSK test, either in offline or online settings. This result can be attributed to most test centres being equipped to deal with the challenges posed by the pandemic in 2021 and to offer the HSK test in various settings.

The present survey was conducted in April/May 2021. The respondents were asked about the number of tests organized by each test centre in 2019 and 2020 and to estimate the predicted number for 2021. The numbers of tests organised by the different centres varied considerably. The focus of the present study was the change in test numbers in 2019 versus the numbers in the pandemic years of 2020 and 2021.[1] As Figure 2 indicates, in most of the test centres, the number of tests administered decreased from 2019 to 2020. However, from 2020 to 2021, the numbers of tests administered increased in the majority of the test centres. In addition, a significant proportion
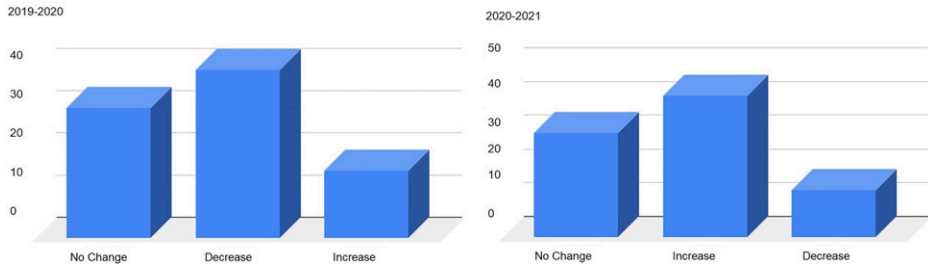
Figure 2. Changes in the numbers of HSK/HSKK tests organized from 2019 to 2021 Source: Data from European Survey—HSK/HSKK: Test implementation during the pandemic.

of the test centres consistently delivered similar numbers of tests across those years. There were exceptions, with some centres organising more tests and having more test-takers in 2020 than in 2019. From this survey alone, conclusions as to the reasons for these increases cannot be drawn. However, it is possible to speculate on some of the causes. For instance, to an open-ended question where the respondents were able to express their views freely, one test centre administrator responded 'I appreciated the fact that we were still able to offer the HSK to students'. This test centre is located in the United Kingdom. It organized seven paper-based tests in test centre in 2019, 15 HSK Home Edition in 2020 and indicated that it was planning on organising six tests in 2021. In 2019, there were 37 test-takers of the seven tests. While the number of tests organised nearly doubled ($n = 15$) in 2020, the number of test-takers ($n = 36$) was similar to that in the previous year. It might be that to reach a similar number of test-takers each year, this test centre needed to organise more test opportunities in the pandemic year of 2020.
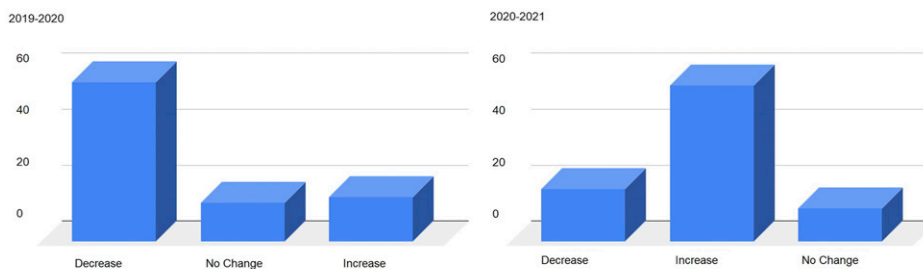
Figure 3 shows the number of test centres that have decreased numbers of test-takers or increased numbers of test-takers or no change between 2019 and 2022. Among the 87 test centres that responded to this survey, the numbers of test-takers decreased at nearly 60 of the centres from 2019 to 2020. This was to be expected, as 2020 marked the beginning of the Covid-19 pandemic. From 2020 to 2021, the number of test-takers increased at nearly 60 of the test centres. 2021 showed an improvement. This was to be expected because by 2021, most centres should have learnt how to get used to the pandemic and still run HSK tests.

Test centres' experience of using the Home Edition improved in the second year of the pandemic

Among the test centres that offered the HSK Home Edition test in 2020, less than half (34.1%) of the centres were 'somewhat satisfied' with the experience. Only a few of the test centres were 'satisfied' (7.3%) or 'not satisfied' (7.3%), and another 7.3% did not express any opinion. When asked about their experiences of using the Home Edition in 2021, as in 2020, less than half (36.8%) were 'somewhat satisfied'. Only a few of the centres were 'very satisfied' (9.2%) or 'not satisfied' (5.3%), and 6.6% had no opinion on the matter. Based on the results for 2020 and 2021, it can be concluded that, in general, the centres that adopted the Home Edition found it moderately satisfactory. Between 2020 and 2021, there was a slight increase in the number of test centres that found the Home Edition 'very satisfactory' and a slight decrease in the number of test centres that found it 'not satisfactory'.

These results correspond to the findings from another question, which asked test centre administrators to compare their experiences in 2020 and 2021. Some test centres that offered the HSK Home Edition believed that the test was organized successfully in both 2020 and 2021.

Figure 3. Number of test centres that have decreased numbers of test-takers or increased numbers of test-takers or no change between 2019 and 2022. Source: Data from European Survey—HSK/HSKK Test Implementation during the Pandemic.

Others believed that the test was organized more successfully in 2021 than in 2020. These results are understandable, as the test centres likely gained experience during their first (2020) attempt at implementing the HSK Home Edition in 2020 and then implemented the test more effectively the following year (2021).

Many problems with the Home Edition, and most test centres do not want it after the pandemic

Despite improvements in the test centres' experiences of organising the Home Edition in 2021 relative to those in 2020, open-ended questions aimed at collecting in-depth views revealed that they had faced many challenges in implementing the Home Edition. It was a commonly held perception that the Home Edition was not easy to organise. This result is in accordance with that in the literature on home-based versions of English tests (Clark et al., 2021; Green & Lung, 2021; Ockey et al., 2021). Most of the test centres administrators stated that they would not use the Home Edition once the pandemic was over, even if this remained an option. Based on the responses to the open-ended questions in the questionnaire, the challenges faced by both the test centres and test-takers fell into three main categories: technical problems with the Home Edition, communication flows between stakeholders and test centre capacity. These categories are inter-related, as shown in the discussion that follows. These challenges are also related to those mentioned earlier in the paper (i.e., test reliability, test fairness and test security vs. test-taker privacy) in relation to online home-based language proficiency tests.

Technical problems with the home edition. Many test centres identified considerable technical barriers and corresponding uncertainties, with several 'sub-challenges' falling within this category. First, the test centre administrators commented that the platform for Home Edition, ExamClient, is not stable, despite improvements to the platform over time. The platform has broken down several times during the course of a test, with some test-takers unable to complete the exam. Many of the test centre administrators also mentioned that the test-takers' anti-virus software often mistook ExamClient for some kind of virus. When this issue was communicated to Chinese Testing International, its response was to instruct test-takers to turn off their anti-virus software. However, test-takers were not willing to switch off their anti-virus software to take a test.

Another technical issue raised by many of the test centre administrators was the requirement that test-takers install invigilation software onto their phones and leave the camera function enabled throughout the test.[2] With this software, someone from Chinese Testing International can conduct remote real-time invigilation throughout the test. This requirement was not in place in

2020 but was in 2021. In 2020, when taking the HSK Home Edition test, a supervisor in a local test centre could oversee the student taking the test via the camera function of the test-taker's phone. Several of the respondents commented that the new rule complicated the implementation of the HSK Home Edition. There were also fears of invasion of privacy, and the instructions given by Chinese Testing International did nothing to alleviate the privacy concerns of the user. For example, one test centre administrator who had taken the HSK Home Edition test in person commented that 'it is somewhat unclear whether the invigilation software that I downloaded to my phone for this exam will be used after this exam'. Most of the respondents agreed that Chinese Testing International should give test-takers more information about the so-called invigilation software that they are required to install on their phones.

The instructions for setting up the testing environment ask test-takers to enter a designated meeting room 1 hour before their Home Edition test. Most of the respondents in our survey thought that this requirement was acceptable. This is most likely because it takes some time to set up the test environment properly. Thus, an extended period is necessary to ensure that the test-taker is ready to start the exam at the designated time.

Other technical issues reported by the respondents included Internet instability in the test-takers' homes, lack of appropriate software to enable them to take the test and lack of experience in typing Chinese characters on their computers. Some of the test centre administrators expressed that the requirement for two devices, a computer and a phone with a camera, was not easy for all those interested in taking the test. Not all test candidates have access to these equipments at home. Currently, HSK Home Edition can only be undertaken on a PC, not a Mac. These aforementioned issues raise concerns regarding equality and fairness, as the test may not be available to all. However, issues relating to equality and fairness are not unique to the HSK Home Edition. They are also challenges for other language assessments, as highlighted in the literature review section of the paper. Overall, the HSK Home Edition is an exceptional measure tailored to meet unique challenges posed by the pandemic. However, it is not necessarily a measure that ensures everyone has equal and fair access to this language test.

Communication flows between stakeholders. Opinions were divided on whether the instructions of Chinese Testing International on the HSK Home Edition were easy to follow, with some test centres administrators believing they were easy to follow but a sizable number of administrators contending the opposite. Most of the test centres agreed that when they needed further information, this was relatively easy to obtain by contacting Chinese Testing International.

In the responses to the open-ended questions, several of the test centre administrators emphasized the need for better communication between Chinese Testing International, test centres and test-takers. One respondent, for example, noted that 'we have to read thousands of WeChat posts daily to keep up-to-date with all the news, innovations and problem solutions concerning HSK Home Edition implementation'. The same respondent commented that 'as the test instructions were only in Chinese when the HSK Home Edition was first launched, the local test centre organiser had to spend many hours translating the instructions into local language for test-takers'. The organiser also had to inform test-takers about potential technical issues and problem solving.

It is interesting to note that a few of the test centres surveyed were unaware of the HSK Home Edition option and wanted additional information about this possibility. The present survey cannot shed light on the reasons why some test centres were unaware of the HSK Home Edition test. Was it due to their own negligence or did Chinese Testing International fail to inform them for some reason? Unfortunately, this study cannot give clear answers to these questions.

Of note, in the qualitative interviews, both the teachers and students stated there was no or insufficient guidance on many aspects of the HSK Home Edition. The three teachers interviewed

had experience in invigilating traditional paper-based offline HSK tests before the pandemic. They had no training in the online HSK Home Edition and found it difficult to assist students during the exam.

Test centre capacity. Several of the test centres surveyed said that staff shortages prevented them from implementing the Home Edition because a great deal of staff support was needed to implement the test. In relation to the technical challenges already mentioned, several test centres noted that the level of technical competence required to be able to help the test-takers solve technical issues was beyond the reach of most of their current staff.

Other problems. Disparate opinions on the implementation of the Home Edition were expressed by some test centres that did not find resonance in any other test centres administrators. This does not mean that these opinions were unimportant. Administrators in some countries may face problems specific to their local environment that are not an issue in centres in other countries. For example, one test centre regularly has many students who do not live in the country where the centre is located. In European countries, this is relatively common, as students frequently cross borders to study in another country. However, Chinese Testing International requires that test-takers are residents in the country where the test centre is located. This is not feasible for test-takers during the pandemic when people were not permitted to cross country borders.

Another example is related to a test centre with under-age test-takers. According to the requirements of this test centre, the test-takers' guardians or parents had to be present during the exam. This poses a risk of malpractice, with the guardians or parents helping the test-takers. However, not all test centres require guardians or parents to be present during the HSK test.

Conclusions and Recommendations for Improvement of Implementing HSK Home Edition

This study surveyed test centres that carry out HSK/HSKK Chinese proficiency tests in Europe, focusing on the centres' adoption of the HSK Home Edition during the pandemic. The findings showed that designers and administrators of HSK tests face challenges similar to those of their counterparts in other language assessment tests. As this survey targeted test centres, the collected data were less concerned with the reliability of the test content and scores. Reliability is certainly in the minds of HSK test designers, that is, Chinese Testing International. However, for the administrators, their considerations were more on the practical issues of overcoming technical problems and addressing test security while considering test-taker privacy.

Although Chinese Testing International offered the HSK Home Edition as an option and a practical alternative to the paper-based HSK test during the pandemic, the majority of test centres in Europe opted to implement the traditional paper-based test. Concerns relating to technical and security issues were among the major factors hindering the successful implementation of the Home Edition. However, a number of test centres utilised the Home Edition in both 2020 and 2021. These centres rated their overall experience as 'satisfactory'. This implies that predicted technical or security issues associated with the adoption of the HSK Home Edition may not be as daunting as first envisaged.

Based on the survey results, this study offers a number of recommendations to Chinese Testing International and test centres. First, Chinese Testing International may need to improve or upgrade the ExamClient platform to remove the need for test-takers to download software to their computers to take the test. This could make the exam platform accessible to both Mac and PC users. Such improvements could also overcome the current problem of test-takers' anti-virus programs rejecting the ExamClient software. In tandem with improvements or upgrades to the

ExamClient platform, it could be helpful to create a built-in Chinese input method to ensure that test-takers do not need to have a proper Chinese typing system on their computers.

Second, Chinese Testing International may need to collaborate with test centres to organise additional training for both staff and test-takers on the HSK Home Edition. Such training might improve communication between stakeholders and help to alleviate concerns surrounding the Home Edition. It could also equip test centre staff with the skills needed to administer the Home Edition successfully.

Third, Chinese Testing International should provide more information on the invigilation software that test-takers must install on their phones when taking the HSK Home Edition test. All EU member states are bound by General Data Protection Regulations (GDPR) and other rules for the protection of personal data. Chinese Testing International should convey a clear message to both test centres and test-takers that the invigilation software does not violate the GDPR. This would boost users' confidence in using the software.

This study is the first to assess the implementation of the HSK Home Edition in Europe during the Covid-19 pandemic. Test centres' views were investigated using a survey and verified by a limited number of qualitative interviews with teachers and test-takers. Future research can follow up by exploring more teachers, invigilators and test-takers' perspectives. If possible, studies should aim to compare test scores obtained using the traditional paper-based HSK test and HSK Home Edition. Such research will provide insight into the reliability of both the test content and scores using both versions. As noted at the outset of this paper, the Covid-19 pandemic has encouraged the use of home-based tests. Although such tests existed prior to the pandemic, they were not particularly popular. The pandemic highlights the need for preparedness for unexpected events. With this in mind, future studies are needed to investigate how to improve test score reliability, test security versus test-taker privacy, and test fairness of the HSK Home Edition.

Notes

1. As each test centre and its located society are different, if we simply look at the numbers of the 87 test centres, individual numbers cannot shed light on the general trend of test centres' implementation of the HSK tests. For example, as shown by the data, one centre had 3300 test-takers in 2019, 2260 test-takers in 2020 and predicted a figure of 6000 test-takers in 2021. Other test centres had fewer than 50 (or 20 in some cases) test-takers each year, with the lowest number in 2020, and these centres said they planned on organising more tests in 2021. In a country like Finland, which has a small population and few Chinese learners, the number of test-takers was consistently low. Thus, reporting the numbers of tests offered and numbers of test-takers at individual test centres is of little value. Reporting the aggregated change

(decrease, increase or no change) from 2019 through 2021 is more worthwhile in the context of the present study. All data collected in this study are available upon reasonable request.

2. The rules for installing and using the invigilation software from Chinese Testing International are as follows:

    1) The test-taker should enter the designated meeting room 1 hour before the test starts, placing the mobile phone 1 m behind him/her and slightly to the left or the right to allow the invigilator to see both the computer screen and the test-taker.

    2) The invigilator should undertake a 360-degree inspection of the test environment using the invigilating software.

    3) The test-taker should ensure that his or her mobile phone is connected to WiFi and turn on flight mode.

    4) The mobile phone should be fully charged to ensure normal operation for the full duration of the test.

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