# Online Interview Tools for Qualitative Data Collection During COVID-19 Pandemic: Review of Web Conferencing Platforms' Functionality

# Chia Chi-Kuan,\*, Simin Ghavifekr, Ahmad Zabidi Bin Abdul Razak

Faculty of Education, University of Malaya, 50604, Kuala Lumpur

\*Correspondence: chiachikuan@siswa.um.edu.my

#### **ABSTRACT**

The COVID-19 pandemic has changed the educational scenario. To counter this disaster, many countries, including Malaysia, have enforced a series of cordon sanitaire since 2020. Consequently, universities have temporarily closed, and a majority of universities staff had to work from home, including researchers. Further, due to cordon sanitaire, conventional face-to-face interviews were prohibited. Nevertheless, online interviews with web conferencing as a tool for interviews is a promising solution for the pandemic situation. Therefore, this article intends to review web conferencing platforms as a tool for online data collection for qualitative research. Researchers need to understand the potential and threats of web conferencing before choosing and switching to conduct interviews virtually. The inclusion criteria are (1) researchers worldwide have used it as an online interview platform, and (2) Malaysians have used it widely in their daily lives. The results, Cisco Webex, Skype, and Zoom, were selected, and reviewed. The review comprised audio-video services, audio-video recordings, numthe ber of participants in one session, real-time transcription, and translation services of the selected platforms. In addition, this article also discusses the security, privacy, and ethical issues arising from web conferencing usage. In conclusion, web conferencing platforms have provided an opportunity for researchers to continue collecting data while maintaining social distancing to prevent the spread of the disease.

Keywords: COVID-19 Pandemic, Online Interview, Qualitative Data Collection, Web Conferencing Platforms

#### **Article Info**

Received 15 May 2021 Accepted 30 May 2021 Published 31 May 2021

# **INTRODUCTION**

Novel Coronavirus (COVID-19) pandemic outbreak hit the world at the end of 2019, including Malaysia (Ain Umaira et al., 2020; DG of Health, 2020; World Health Organization, 2020). This disease is not just a common medical problem; it has affected the social order of the world (Teti, Schatz, & Liebenberg, 2020). The COVID-19 pandemic has indeed changed the world and has introduced a new norm to the education sector (Fogarty et al., 2020; World Health Organization, 2020). Meanwhile, to counter the pandemic, the Malaysian government has enforced a series of cordon sanitaire since 2020 (Zeti Azreen & Kamaruzzaman, 2020; Chan & Teh Athira Yusof, 2021). Consequently, educational institutions like universities are temporarily closed and replaced with online teaching and learning (Azlan et al., 2020; Kamal, Shaipullah, Truna, Sabri, & Junaini, 2020; Lim, 2020; Zeti Azreen & Kamaruzzaman, 2020). Thereby, universities have used web conferencing platforms like Zoom Cloud Meetings (Zoom Video Communications Inc., 2021d) and Google Meet (Google, 2021) to replace conventional face-to-face communication and teaching in universities (Azlan et al., 2020; Kamal et al., 2020; Lim, 2020; Zeti Azreen & Kamaruzzaman, 2020).

The pandemic has affected research activities in universities worldwide (Servick, Cho, Guglielmi, Vogel, & Couzin-Frankel, 2020) and Malaysia (Choong, 2020). However, since May 2020, the Malaysian government has allowed researchers to return to universities for research purposes (Lee, 2020). Nevertheless, this action did not help much for social sciences researchers. Most social science research is not directly related to the pandemic nor conducted in laboratories. Thus, researchers are encouraged to change from a conventional data collection method

to other methods (Lobe, Morgan, & Hoffman, 2020). As a result, social sciences researchers need to embrace online virtual methods such as online interviews to collect data during the pandemic (Chong & Ng, 2021). The solution is to change to web conferencing or online conference technology as an alternative data collection tool (Lobe et al., 2020).

This paper aims to provide a conceptual review of the impact of the current COVID-19 pandemic in regard to data collection by social science researchers. Moreover, it discusses how using web conferencing platforms can be a potential solution to be used as a tool for an online interview. Besides, the article elaborates on the functionality of three selected web conferencing platforms: Skype (Microsoft Corporation, 2021e), Cisco Webex (Cisco Webex, 2021b), and Zoom Cloud Meetings (Zoom Video Communications Inc., 2021d) in collecting qualitative data. In addition, this paper discusses the security, privacy, and ethical issues arising from web conferencing usage and recommends a platform for its usage in Malaysia.

Qualitative research, in philosophy, is interpretivism and subjectivism. Thus, qualitative research focuses on understanding how human beings interpret their experiences, construct their worlds, meaning their experiences, and generate models or theories (Merriam, 2009; Siti Fatimah, 2010). Therefore, an interview is one of the three essential data collection methods in qualitative research, and the other two are the analysis of documents and observations (Merriam, 2009). Nevertheless, researchers cannot conduct face-to-face interviews with participants or observations because of the pandemic, and not all qualitative research data can employ document analysis. At the same time, due to the pandemic, numerous problems are emerging for researchers, either in the medical sciences or social sciences, to be solved. Researchers must find a way to counter this situation, and web conferencing as a tool for online interviews is a viable promising solution.

Web conferencing as a research tool for online interviews in qualitative research is not a new phenomenon. Researchers worldwide have used it for online interviews before and even now, during the pandemic (Cater, 2011; Hatten & Christensen, 2012; Sullivan, 2012; Deakin & Wakefield, 2014; Tuttas, 2015; Lo Iacono, Symonds, & Brown, 2016; Kite & Phongsavan, 2017; Lobe, 2017; Matthews, Baird, & Duchesne, 2018; Archibald, Ambagtsheer, Casey, & Lawless, 2019; Daniels, Gillen, Casson, & Wilson, 2019; CohenMiller, Schnackenberg, & Demers, 2020; Deitte, Mian, Esfahani, & Hu, 2020; Lobe et al., 2020; Morrison, Lichtenwald, & Tang, 2020; Patel et al., 2020; Reñosa et al., 2021; Roberts, Paylakis, & Richards, 2021).

Yet, this method of research is not common in Malaysia. There is presently literature on web conferencing in teaching and learning in the Malaysian context (Azlan et al., 2020; Kamal et al., 2020; Lim, 2020; Zeti Azreen & Kamaruzzaman, 2020). Nonetheless, the literature on web conferencing in qualitative research methodology is insufficient (Tiong & Sim, 2020). Therefore, this article intends to review web conferencing platforms as a tool for online data collection for qualitative research. Researchers need to understand the potential and the risks of web conferencing before choosing and switching to interviews virtually. Thus, this review encompasses the functionality of web conferencing platforms and the security, privacy, and ethical issues arising from web conferencing usage.

# **METHOD**

Nowadays, there are countless web conferencing platforms available in the market. Nevertheless, the authors cannot review all the web conferencing platforms. Thus, for the review of web conferencing platforms in this article, the inclusion criteria are (1) researchers worldwide have used them as online interview platforms, and (2) Malaysia citizens have used them for daily communications.

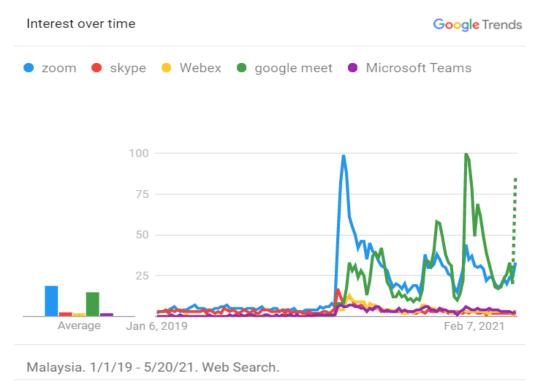
From these inclusion criteria, the authors have selected three platforms, which are Skype (Microsoft Corporation, 2021e), Cisco Webex (Cisco Webex, 2021b), and Zoom Cloud Meetings (Zoom Video Communications Inc., 2021d). Table 1 shows the choice of web conferencing platforms by researchers in their research. Meanwhile, there is insufficient data on the choice and use of web conferencing platforms in Malaysia. Therefore, the authors used Google Trends to track the search term of web conferencing platforms in Malaysia from January 2019 until May 2021. Terms like Zoom, Skype, Google Meet, Webex, and Microsoft Team were tracked. Figure 1 shows the last three years' trend of web conferencing search in Malaysia. The trend shows that Google Meet is as high as Zoom since 2020. Nevertheless, Google Meet and Microsoft Team are not reviewed in this article due to insufficient literature on them as tools for online interviews.

The review methods referred to Lobe et al. (2020), which is only from web conferencing platforms' functionality perspective, such as audio-video services, audio-video recordings, and the number of participants in one session.

Moreover, the authors included real-time transcription and translation services in the reviews as well. The last part of the discussion is on the security, privacy, and ethical issues arising from web conferencing usage.

**Table 1**: The choice of web conferencing platforms by researchers

Authors	Year	Year Zoom		Webex
Cater	2011		X	
Sullivan	2012		X	
Hatten & Christensen	2012			X
Deakin & Wakefield	2014		X	
Tuttas	2015			X
Lo Iacono et al.	2016		X	
Kite & Phongsavan	2017	X		
Lobe	2017	X		
Matthews et al.	2018	X		
Archibald et al.	2019	X		
Daniels et al.	2019	X		
Morrison et al	2020			X
Reñosa et al.	2021	X		



**Figure 1**: Google Trend of web conferencing search term in Malaysia from January 2019 to May 2021. Data source: Google Trends (2021)

### **RESULTS AND DISCUSSION**

Web conferencing, also known as online conference technology or Voice over Internet Protocol (VoIP)-mediated technology (United State Federal Communications Commission, 2019), has been used in qualitative research as an online interview tool for some time (Lobe, 2017; Matthews et al., 2018; Archibald et al., 2019; Daniels et al., 2019; Lobe et al., 2020). It is a communication technology tool that enables the user to have real-time audio and

full-motion video online communication (Archibald et al., 2019). Many others have named this technology as computer-mediated communication (Romiszowski & Mason, 1996; Jankowski & Selm, 2005; Cater, 2011), videoconferencing services or platforms (Lobe et al., 2020), web-based conferencing (Morrison et al., 2020), and web-based seminar (Tiong & Sim, 2020). Currently, there are more than ten web conferencing platforms available in the market.

For this review, the authors have only discussed three selected platforms, which have been used extensively by researchers in qualitative research as a tool for online interviews (Cater, 2011; Hatten & Christensen, 2012; Sullivan, 2012; Deakin & Wakefield, 2014; Tuttas, 2015; Lo Iacono et al., 2016; Kite & Phongsavan, 2017; Lobe, 2017; Matthews et al., 2018; Archibald et al., 2019; Daniels et al., 2019; Deitte et al., 2020; Lobe et al., 2020; Morrison et al., 2020; Patel et al., 2020). These are Skype (Microsoft Corporation, 2021e), Cisco Webex (Cisco Webex, 2021b, 2021a), and Zoom Cloud Meetings (Zoom Video Communications Inc., 2021d). Further, these three platforms are commonly used in Malaysia, as depicted in the Google Trend results above.

#### **Zoom Cloud Meeting**

Zoom Cloud Meetings (Zoom Video Communications Inc., 2021d) have been used by researchers as a tool for an online interviews for quite some time (Kite & Phongsavan, 2017; Lobe, 2017; Matthews et al., 2018; Archibald et al., 2019; Daniels et al., 2019; Reñosa et al., 2021). Nevertheless, due to the pandemic, Zoom has become a popular choice for those who work from home, as reflected in its company stock in 2020 (Mashayekhi, 2020; Reinicke, 2020).

Zoom provides real-time one-to-one and multi-participant online conferencing services as a free plan and a paid plan. Additionally, an online conferencing recording service is available in all plans (Zoom Video Communications Inc., 2021a). The free plan can support up to 100 participants in an online group meeting for a maximum duration of 40 minutes per session and unlimited time for a one-to-one meeting. This plan is suitable for most qualitative research interviews for a few reasons. First, it is free, which is suitable in a situation of research grant constraints. Second, 40 minutes of an online interview is sufficient for researchers to collect data, and participants are less likely to feel fatigued during this duration. Third, after getting online consent and permission to record interviews from participants, researchers can record the online interview with just one click on Zoom. While, for the paid plan, Zoom provides better facilities. To be specific, Business Plan and United Business Plan provide a real-time transcription service during an online meeting session, and hosts who are researchers can download the transcript draft at the end of the session (Zoom Video Communications Inc., 2021a). Researchers can further improve and refine the transcript draft by double-checking it with the playback of the original interview recording. However, this service is not available in the free plan and Pro Plan.

Alternatively, for a Pro Plan, researchers can link Zoom with the Otter.ai programme. The Otter.ai programme is an artificial intelligence (AI) speech-to-text website (Otter.ai, 2021c), commonly known as an auto-transcription website. The Otter.ai programme free plan provides a free 600 minutes/month transcription. For more than 600 minutes of transcription, researchers need to subscribe to the paid plan (Otter.ai, 2021a). Researchers need to switch on the streaming of Otter.ai Live Transcription during an interview. After that, a web browser will emerge and show the real-time transcripts streaming. The draft will be shown on the Otter.ai website, and it can be further refined by researchers by checking it with the playback recording. While for the Zoom free plan, it does provide a real-time transcript service as well. Nevertheless, the transcript text will not be auto-saved as a draft at the end of a session. However, this can be solved by playing the recording again and copying the transcript manually.

Additionally, the Otter.ai free plan can support other web conferencing platforms, like Skype and Webex. Researchers just need to record and upload the interview to the Otter.ai website (Otter.ai, 2021c). The supported formats are audio (mp3, aac, wav, m4a, wma) and video (mp4, avi, mov, wmv, mpg). The free plan only limits three uploads per account with a maximum of 40 minutes/of recording transcription. After that, researchers need to subscribe to the paid plan. Auto-transcription website is good for researchers because it takes a long time for a conventional human transcription method. The auto-transcription website has shortened the interview transcription time. However, there is a limitation to this auto-transcription website, which is the support language, e.g., Zoom Business Plan, United Business Plan, and Otter.ai only supports English (Otter.ai, 2021b; Zoom Video Communications Inc., 2021c). Furthermore, users need to use a standard language pronunciation for accurate transcription by the auto-transcription website.

Besides, Zoom can support a real person's language interpretation (Zoom Video Communications Inc., 2021b). It works by allowing a person who understands the language of both the researcher and participant and provides a real-time translation, just like in the real world. Researchers can assign a professional translator or a researcher

who understands the languages of both parties to work as a translator during an online interview. This function is beneficial to researchers, and it is possible to help researchers collect data from those who do not speak the researchers' language. For example, Malaysia is a multi-racial nation, where Malaysians use different languages to communicate daily, according to their ethnicity and choice of language. In some situations, researchers and the participants might not share the same language. This function is helpful when non-Chinese/Tamil-speaking researchers need to interview a very old participant who only speaks Mandarin or Tamil.

Nevertheless, researchers need to be extra careful in this process. This is because the translator might translate the answer from the participant wrongly or inaccurately. In other words, an error might happen during the translation process. Language differences can produce severe data errors. Further, this process needs an experienced bilingual translator or researcher (Esposito, 2001; Clark, Birkhead, Fernandez, & Egger, 2017).

In terms of security and privacy, in 2020, Zoom meeting privacy became an issue (Izwan, 2020; Ling, Balcı, Blackburn, & Stringhini, 2020; Lobe et al., 2020; O'Flaherty, 2020; Singh & Awasthi, 2020). To overcome this problem, Zoom has issued a security guideline which is, Zoom Security White Paper (Zoom Video Communications Inc., 2020). In this guideline, when a user conducts a Zoom meeting, each meeting will have unique password protection. Moreover, only those who have the password can access the meeting. The participants need to key in the password before entering the online meeting. Those with a link but without a password cannot enter the meeting.

#### Skype

Skype (Microsoft Corporation, 2021e) is one of the earlier web conferencing platforms that researchers have used in qualitative data collection (Cater, 2011; Sullivan, 2012; Deakin & Wakefield, 2014; Lo Iacono et al., 2016). Skype provides free internet audio calls, video calls, and instant massager services. Researchers can use it directly with a web browser or download the software from https://www.skype.com/en/get-skype/ and install it on their computers or smartphones. Skype supports one-to-one and multi-participant video conferencing. Nevertheless, the stability of Skype's web depends on the stability of the Internet. Thus, it works best with software rather than solely on a web browser (Lobe, 2017). The advantage of Skype is that it has been used worldwide for a long time (Cater, 2011; Sullivan, 2012; Deakin & Wakefield, 2014; Lo Iacono et al., 2016). Hence, participants might accept this software better compared to others.

Skype also provides audio-video recording as well. Like Zoom, the recording can only be controlled by the host, who is the researcher. What makes it different is that when researchers press the recording button, Skype will pop up a legal warning to researchers to acquire consent from participants. When an interview ends, the recorded footage is uploaded to the Skype cloud automatically, and researchers can download it for 30 days before the session ends. To start the Skype online meeting, researchers and participants need to have a Skype account. The account is free of charge for Skype-to-Skype video conferencing.

One unique feature of Skype is it provides live captions and subtitles during video conferencing (Microsoft Corporation, 2021b, 2021a), which is also known as real-time transcription. The disadvantage of this service is that the transcribed text will not be auto-saved as a draft at the end of a session. Nevertheless, this can be solved by playing back the recorded video and copying the transcript text manually. One thing to note here is that this feature is still under preview, which means that in the future, it might change when it is released or updated (Microsoft Corporation, 2021a). The languages supported by this function are English, Arabic, Chinese, and many more (Microsoft Corporation, 2021a). Nonetheless, the accuracy of the transcription depends on the pronunciation of users.

Moreover, Skype does provide a real-time translation service. However, it is still under preview, which is the same as the real-time transcription function (Microsoft Corporation, 2021a, 2021f). The Skype translation features are different from Zoom. Skype translation uses machine learning, or in other words, uses AI to process the translation, and it covers speech-to-speech/text and text-to-text translation. For example, when Malay/English-speaking researchers need to interview a very old participant who only speaks Mandarin or Tamil in Skype, both parties only need to use their own preferred languages. At the same time, text-to-text translators cover more than 60 languages for clear, seamless instant messaging. Details of the support languages can be found at Microsoft Corporation (2021c) and how it works in Microsoft Research's (2016) YouTube Video.

Still, an important aspect to note here is that researchers must be extra careful when using this feature because the translation process uses machine learning. The meaning of an interview or the accuracy of a translated interview might be lost in the machine translation process, especially when both parties have different backgrounds or

cultures. In other words, a mistake might happen during the machine translation process. Further, when communicating on complex and advanced matters, a machine translates more accurately in languages near English like Spanish, Russian, and French (Shadiev, Wu, Sun, & Huang, 2018). Moreover, Tobin (2015) has reminded us that machine translations might have ambiguities and errors. Therefore, it is doubtful that the current machine translator technology can accurately translate the context of culture and complicated communication meanings of human beings. Again, the pronunciation of users affects the accuracy of the transcription and translation process.

Finally, Security and Skype for Business Online (Microsoft Corporation, 2021d) have discussed the security and privacy of Skype regarding its privacy and security features. To make it simple, Skype Business Online complies with the Microsoft Trustworthy Computing Security Development Lifecycle. All data is protected in the network, and Skype network communication is encrypted by default. The techniques included Secure Real-Time Transport Protocol, Transport Layer Security (TLS), Open Authorization (OAuth), and other industry-standard encryption methods, like the 256-bit Advanced Encryption Standard encryption. Nevertheless, like other technologies, only participants who are added by the host can be connected to the meeting (Lobe et al., 2020).

#### Cisco Webex

Cisco Webex (Cisco Webex, 2021b, 2021a) is another choice for web conferencing by researchers (Hatten & Christensen, 2012; Tuttas, 2015; Morrison et al., 2020). In a free plan, Cisco Webex supports one-to-one and multi-participant video conferencing interviews in one session. However, the free plan did not provide an audio and video recording. Therefore, researchers need to subscribe to the paid plan to record the interview. Like others, only a host, who is the researcher, can record the video conferencing in the paid plan. In terms of access and usage of Cisco Webex, researchers need to have an account and create an online meeting, but participants do not need an account to join in. However, all the parties need to install the software on their computer or smartphone.

Cisco Webex provides transcription services as well. However, this service is only available in the paid plan, like Starter Plan and above. Again, just like the platforms discussed above, users' language pronunciation affected the transcription accuracy. For the free plan, researchers can play back the recorded video for the transcript text at the end of the interview session. Besides, Cisco Webex also provides a real-time translation service (Cisco Webex, 2021c). This feature is expected to be in the market in May 2021. Like Skype, it uses machine learning and can translate English into 100 languages, like French and others. The actual situation of how this function works will only be known after it has been launched into the market.

Alternatively, for Cisco Webex free plan, researchers can install a screen recording software on their computer and record the online interview. Next, the researcher can follow up by uploading the recorded video or audio to a reliable AI speech-to-text website, like Otter.ai (Otter.ai, 2021c) and AmberScript (AmberScript, 2021), for a free transcription service. Again, the language users' pronunciation affects the accuracy of the transcription. Of course, there is always a limited free transcript time because it is a free service. Above that, researchers need to pay for its service.

In terms of privacy and security, Cisco Webex has faced similar privacy issues on its software like Zoom in 2020 (Cisco Systems Inc., 2020a; Lobe et al., 2020; O'Donnell, 2020; Scroxton, 2020; Singh & Awasthi, 2020; Zorz, 2020). This issue will be discussed below. Nevertheless, to counter this problem, Cisco Webex has suggested that a host can prohibit participants from joining before the host begins the conference, locking conferences with a password and ensuring participants cannot join before getting authentication from the host (Lobe et al., 2020). Cisco Systems, Inc. has published a paper to help users understand better Cisco Webex security features (Cisco Systems Inc., 2020b). To make it simple, free plan security features have Health Insurance Portability and Accountability Act (HIPAA)/Business Associate Agreements (BAA) compliance, end-to-end encryption, TLS v1.2 support, meeting password-protection, and lock the private meeting room. In comparison, the paid plan adds on Federal Risk and Authorization Management Program (FedRamp) to authorised and encrypted cloud recording (Cisco Webex, 2021a). Table 2 summarises the functionalities of the above three platforms.

Platform	Audio- video	Audio- video recording	Instant messenger	Requires participants install software	Participants need to have an account to attend	Multiple participants in one session	Real-time transcription	Real-time translation
Skype	/	/	/	/	/	/	/	/
Webex	/	X	/	/	X	/	X	X
Zoom	/	/	/	/	X	/	X	X

**Table 2**: Functionalities of three web conferencing platforms (free plan)

#### Security, Privacy, and Ethical Issues

Once online, always online!', security is the primary concern when using web conferencing technology (Lobe, 2017; Anscombe, 2020; Lobe et al., 2020). Hackers used a bug name "Prying Eye" to find and join open meetings and "bombing" Zoom and Cisco Webex online conferencing in the year 2020 (Cisco Systems Inc., 2020a; Izwan, 2020; Ling et al., 2020; Lobe et al., 2020; O'Donnell, 2020; O'Flaherty, 2020; Scroxton, 2020; Singh & Awasthi, 2020; Zorz, 2020). Out of a sudden, Zoom was banned in Singapore for that period (Farrer, 2020). To counter this issue, Cisco Webex suggests users prohibit "joins" before the host starts the conference or meeting, locks the meeting, and ensures guests cannot join without the verification (Lobe et al., 2020). The same goes for Zoom and other platforms.

Of course, it is hard to design software against all unknown security threats. There is no single system in the world that can provide 100% guaranteed security (Microsoft Corporation, 2021d). Therefore, researchers need to learn how to protect themselves in order to minimise the threat. All users are not encouraged to share the password with other security items because if the attacker has the password, they can steal the data without the knowledge of the user (Microsoft Corporation, 2021d). Further, researchers can utilise the waiting room function to control who can enter the conference (Lobe et al., 2020).

Additionally, to ensure the confidentiality of data, there is a need to remove all personal identifiers (Lobe et al., 2020). HIPAA Privacy Rule has listed 18 personal identifiers that researchers need to consider when keeping the data anonymous. HIPAA is a law in the United States designed to protect the medical information of patients (Anderson & Corneli, 2017). These 18 personal identifiers are names, fax numbers, phone numbers, and more (Information Technology Services, 2020; Office for Protection of Human Subjects, 2021). In practice, researchers must prevent the linkage between collected data and the personal information of the participant, like an email address or phone number. One more straightforward solution is to print out the emails with an expression of consent, archive them in a hardcopy form, and delete the electronic form (Lobe et al., 2020).

From the legal perspective, according to Lobe et al. (2020), in the United States, if the research involves the personal information of the patient or protected health information under HIPPA, then the web conferencing software need to have HIPAA compliance and BAA agreement. This is to ensure that the servers do not hold data from an interview that comprises protected health data. Zoom and Cisco Webex have fulfilled this requirement. While in Europe, the regulation to comply is the General Data Protection Regulation (Official Journal of the European Union, 2016). In this case, online conference platform companies like Google and Zoom all follow this act because it only applies to the company, not the software (Lobe et al., 2020).

In terms of data storage, the best recommendation is for local storage, like the computers of researchers, instead of cloud storage (Lobe et al., 2020). This is because cloud storage is more accessible for the hacker to steal information compared to local storage. Of course, the local storage needs to have a protected password and be encrypted. Further, the local storage computer needs to have an anti-virus system.

As for online ethical issues, researchers can replace the paper consent form with an online consent form and email it to the participant (Lobe, 2017). All researchers need to file a simple methodology amendment application to the ethical board (Lobe et al., 2020). For example, University Malaya Research Ethics Committee has issued a new internet survey consent form (Institute of Research Management & Services, 2016) for researchers. The consent details are still the same as a conventional paper consent form they can withdraw from the study at any time they prefer (Merriam, 2009; Lobe et al., 2020). Researchers need to answer inquiries from participants before they agree to accept an interview and sign the online consent online via email (Hewson, Vogel, & Laurent, 2016). Regardless of how the qualitative data collection method has changed, researchers should never overlook the ethical issues, i.e. anonymity—pseudonym, respect for people, risks/benefits for the common good, risks/benefits

for participants, subject compensation, cross-cultural matters, special/vulnerable populations, justice, open versus interpersonal space, dishonesty, nondisclosure, conflicts of interest, and research misconduct (Ess & af Segerstad, 2019).

On protecting the identity of the participants as in focus group interviews, Daniels et al. (2019) have suggested that researchers need to prepare rules and write informed consent before an interview. In the face-to-face focus group interview, researchers can control participants and related people in the interview space. However, in an online interview, researchers have no control over the participants' online interview space. For example, a friend or family member of the participants might be in the vicinity when the online interview takes place. It is possible to expose the identity of the other participants to their friends and family members if they look at the computer screen during the interview. This applies to one-to-one interviews as well. Researchers need to make sure that an online interview is conducted in a secure space where only related people are allowed into the vicinity of the online interview.

#### CONCLUSION AND RECOMMENDATION

In Malaysia, a web conferencing platform as a data collection tool is considered a relatively new method in qualitative research. Nevertheless, the COVID-19 pandemic outbreak has accelerated the use of web conferencing platforms in the university, either in the collection of qualitative research data or teaching and learning. Furthermore, a web conferencing platform has provided an alternative way for researchers to continue collecting data during the COVID-19 pandemic. Additionally, the quality of web conferencing platforms recording is better than the conventional interview recording quality. Plus, web conferencing platforms can link to the auto-transcript web, shorten the research time, and simplify the tedious conventional human transcription process. While in terms of the security of the web conferencing platform, users need to update it regularly. As for privacy and ethical issues when conducting an online interview with web-conferencing platforms, the protocol is still very similar to a conventional face-to-face interview.

From the review of the three web conferencing platforms above, the authors consider Zoom suitable for data collection in Malaysia for a few reasons. First, Google Trend Malaysia shows it highly searches after March 2020, which means it is commonly used in Malaysia. Second, the functionality in Zoom free plan is sufficient for qualitative data collection. Third, Zoom is easy to operate, either for researchers or interviewees. Further, some Malaysian researchers have used Zoom to collect data in their research during cordon sanitaire (Chong & Ng, 2021).

This paper has discussed the functionality of three selected web conferencing platforms' and provides a basic understanding to readers on the switch from face-to-face qualitative data collection to an online interview method. Researchers need to understand the potentials and risks of each platform before they choose and switch their interviews to online. In conclusion, web conferencing platforms have provided an opportunity for researchers to continue collecting data while maintaining social distancing to prevent the spread of the disease. Further investigation could be conducted to explore the perspectives of both researchers and participants regarding the utilisation of online conference technology as a qualitative data collection method in Malaysia by employing a phenomenological approach.

# **DECLARATION STATEMENT**

The lead author\* affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

# **ACKNOWLEDGEMENT**

The authors would like to express their gratitude to Aai, Sheau Yean, a PhD candidate from the Faculty of Education, University of Malaya, for providing valuable input to this study.

# **CONFLICT OF INTEREST**

The authors declare no self-interest in the study conducted.

### **REFERENCES**

- Ain Umaira, M. S., Syafiqah Nur, A. S., Thevadas, R., Nor Kamariah, N., Azmawani, A. R., Zamberi, S., Mohamed Thariq, H. S. (2020). COVID-19 outbreak in Malaysia: Actions taken by the Malaysian government. International Journal of Infectious Diseases, 97, 108-116.
- AmberScript. (2021). *Transform your audio and video to text and subtitles*. https://www.amberscript.com/en/Anderson, E. E., & Corneli, A. (2017). *100 questions (and answers) about research ethics*. California: SAGE Publications.
- Anscombe, T. (2020, 30 March 2020). Work from home: *Videoconferencing with security in mind*. <a href="https://www.welivesecurity.com/2020/03/30/work-from-home-videoconferencing-security-in-mind/">https://www.welivesecurity.com/2020/03/30/work-from-home-videoconferencing-security-in-mind/</a>
- Archibald, M. M., Ambagtsheer, R. C., Casey, M. G., & Lawless, M. (2019). Using Zoom videoconferencing for qualitative data collection: Perceptions and experiences of researchers and participants. *International Journal of Qualitative Methods*, 18, 1-8.
- Azlan, C. A., Wong, J. H. D., Tan, L. K., Huri, M. S. N. A., Ung, N. M., Pallath, V., Ng, K. H. (2020). Teaching and learning of postgraduate Medical Physics using internet-based e-learning during the COVID-19 pandemic–a case study from Malaysia. *Physica Medica*, 80, 10-16.
- Cater, J. K. (2011). Skype a cost-effective method for qualitative research. *Rehabilitation Counselors & Educators Journal*, 4(2), 3-6.
- Chan, D., & Teh Athira Yusof. (2021, 10 May 2021). *Nationwide MCO 3.0 from 12 May*. New Straits Times. <a href="https://www.nst.com.my/news/nation/2021/05/689347/nationwide-mco-30-may-12">https://www.nst.com.my/news/nation/2021/05/689347/nationwide-mco-30-may-12</a>
- Chong, S. L., & Ng, S. B. (2021). Challenges in virtual data collection: Some practical suggestions. *Malaysian Journal of Qualitative Research*, 7(1), 107-113.
- Choong, P. Y. (2020, 8 May 2020). *COVID-19: Impact on the tertiary education sector in Malaysia*. Retrieved on 3 January, 2021 from <a href="https://penanginstitute.org/publications/covid-19-crisis-assessments/covid-19-impact-on-the-tertiary-education-sector-in-malaysia/">https://penanginstitute.org/publications/covid-19-crisis-assessments/covid-19-impact-on-the-tertiary-education-sector-in-malaysia/</a>
- Cisco Systems Inc. (2020a, 10 December 2020). Cisco Webex meetings and Cisco Webex meetings server ghost join vulnerability. <a href="https://tools.cisco.com/security/center/content/CiscoSecurityAdvisory/cisco-sa-webex-auth-token-3vg57A5r">https://tools.cisco.com/security/center/content/CiscoSecurityAdvisory/cisco-sa-webex-auth-token-3vg57A5r</a>
- Cisco Systems Inc. (2020b). *Cisco Webex meetings security*. Retrieved on 9 January, 2021 from <a href="https://www.cisco.com/c/dam/en/us/products/collateral/conferencing/webex-meeting-center/white-paper-c11-737588.pdf">https://www.cisco.com/c/dam/en/us/products/collateral/conferencing/webex-meeting-center/white-paper-c11-737588.pdf</a>
- Cisco Webex. (2021a). *Choose a plan that empowers your life and business*. https://www.webex.com/pricing/index.html
- Cisco Webex. (2021b). Cisco Webex (Version 41.6.0.19119). California: Cisco Webex. Retrieved on 17 June, 2021 from https://www.webex.com/
- Cisco Webex. (2021c). *Real-time transcription*. <a href="https://www.cisco.com/c/en/us/products/conferencing/webex-meetings/transcription.html">https://www.cisco.com/c/en/us/products/conferencing/webex-meetings/transcription.html</a>
- Clark, L., Birkhead, A. S., Fernandez, C., & Egger, M. J. (2017). A transcription and translation protocol for sensitive cross-cultural team research. *Qualitative Health Research*, 27(12), 1751-1764.
- CohenMiller, A. S., Schnackenberg, H., & Demers, D. (2020). Rigid flexibility: Seeing the opportunities in "failed" qualitative research. *International Journal of Qualitative Methods*, 19, 1-6.
- Daniels, N., Gillen, P., Casson, K., & Wilson, I. (2019). Steer: Factors to consider when designing online focus groups using audiovisual technology in health research. *International Journal of Qualitative Methods*, 18, 1-11.
- Deakin, H., & Wakefield, K. (2014). Mixed-interview methods: Reflections of two PhD researchers using Skype. *Qualitative Research*, 14(5), 603-616.
- Deitte, L. A., Mian, A. Z., Esfahani, S. A., & Hu, J. Y. (2020). Going virtual: Redesigning the interview experience. *Journal of the American College of Radiology*, 18(2), 337-339.
- DG of Health. (2020). Kenyataan akhbar KPK 19 Disember 2020 *situasi semasa jangkitan penyakit Coronavirus* 2019 (COVID-19) di Malaysia. Retrieved on 20 December, 2020 from https://kpkesihatan.com/2020/12/19/kenyataan-akhbar-kpk-19-disember-2020-situasi-semasa-jangkitan-penyakit-coronavirus-2019-covid-19-di-malaysia/
- Esposito, N. (2001). From meaning to meaning: The influence of translation techniques on non-English focus group research. *Qualitative Health Research*, 11(4), 568-579.
- Ess, C. M., & af Segerstad, Y. H. (2019). Everything old is new again: The ethics of digital inquiry and its design. In Å. Mäkitalo, T. E. Nicewonger, & M. Elam (Eds.), *Designs for experimentation and inquiry:*Approaching learning and knowing in digital transformation (1st ed., pp. 176-196). London: Routledge.

- Farrer, M. (2020, 11 April 2020). Singapore bans teachers using Zoom after hackers post obscene images on screens. The Guardian. <a href="https://www.theguardian.com/world/2020/apr/11/singapore-bans-teachers-using-zoom-after-hackers-post-obscene-images-on-screens">https://www.theguardian.com/world/2020/apr/11/singapore-bans-teachers-using-zoom-after-hackers-post-obscene-images-on-screens</a>
- Fogarty, P., Frantz, S., Hirschfeld, J., Keating, S., Lafont, E., Lufkin, B., . . . Turits, M. (2020). *Coronavirus: How the world of work may change forever*.

  <a href="https://www.bbc.com/worklife/article/20201023-coronavirus-how-will-the-pandemic-change-the-way-we-work">https://www.bbc.com/worklife/article/20201023-coronavirus-how-will-the-pandemic-change-the-way-we-work</a>
- Google. (2021). *Google Meet* (Version 2021.05.02.373237828). California: Google LLC. Retrieved on 17 June, 2021 from meet.google.com
- Google Trends. (2021, 2021). *Compare Zoom, Skype, Webex, Google Meet, Microsoft Team*. Retrieved on 20 May, 2021 from <a href="https://trends.google.com/trends/explore?date=2019-01-01%202021-05-20%geo=MY&q=zoom,skype,Webex,google%20meet,Microsoft%20Teams">https://trends.google.com/trends/explore?date=2019-01-01%202021-05-20%geo=MY&q=zoom,skype,Webex,google%20meet,Microsoft%20Teams</a>
- Hatten, J., & Christensen, L. (2012). Utilizing online technologies to effectively facilitate data gathering in large-scale qualitative research. Paper presented at the E-Learn 2012 World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 1, Montréal, Quebec, Canada.
- Hewson, C., Vogel, C., & Laurent, D. (2016). Ethics in internet-mediated research In C. Hewson, C. Vogel, & D. Laurent (Eds.), *Internet research methods* (2nd ed., pp. 99-116). California: SAGE Publications Ltd.
- Information Technology Services. (2020). 18 HIPAA identifiers.
  - https://www.luc.edu/its/aboutits/itspoliciesguidelines/hipaainformation/18hipaaidentifiers/
- Institute of Research Management & Services. (2016). *University of Malaya research ethics committee* (UMREC). <a href="https://umresearch.um.edu.my/university-of-malaya-research-ethics-committee-umrec">https://umresearch.um.edu.my/university-of-malaya-research-ethics-committee-umrec</a>
- Izwan, I. (2020, 9 April, 2020). *Security issues surrounding Zoom not serious, says CEO*. New Straits Times. Retrieved on 17 June, 2021 from <a href="https://www.nst.com.my/news/nation/2020/04/582691/security-issues-surrounding-zoom-not-serious-says-ceo">https://www.nst.com.my/news/nation/2020/04/582691/security-issues-surrounding-zoom-not-serious-says-ceo</a>
- Jankowski, N., & Selm, M. v. (2005). Epilogue: Methodological concerns and innovations in internet research. In C. Hine (Ed.), *Virtual methods: Issues in social research on the internet* (pp. 199-207). Oxford: Berg Publishers.
- Kamal, A. A., Shaipullah, N. M., Truna, L., Sabri, M., & Junaini, S. N. (2020). Transitioning to online learning during COVID-19 pandemic: Case study of a pre-university centre in Malaysia. *International Journal of Advanced Computer Science and Applications*, 11(6), 217-223.
- Kite, J., & Phongsavan, P. (2017). *Insights for conducting real-time focus groups online using a web conferencing service*. F1000 Research, 6(122), 1-13.
- Lee, C. H. (2020, 31 May 2020). *Young researchers back on track*. The Star. https://www.thestar.com.my/news/education/2020/05/31/young-researchers-back-on-track
- Lim, I. (2020, 16 March 2020). COVID-19: What are Malaysia's public universities doing? Online classes and more... Malay Mail. Retrieved on 17 June, 2021 from <a href="https://www.malaymail.com/news/malaysia/2020/03/16/covid-19-what-are-malaysias-public-universities-doing-online-classes-and-mo/1847071">https://www.malaymail.com/news/malaysia/2020/03/16/covid-19-what-are-malaysias-public-universities-doing-online-classes-and-mo/1847071</a>
- Ling, C., Balcı, U., Blackburn, J., & Stringhini, G. (2020, 8 September 2020). *A first look at Zoombombing*. arXiv preprint arXiv:2009.03822. https://arxiv.org/abs/2009.03822
- Lo Iacono, V., Symonds, P., & Brown, D. H. (2016). Skype as a tool for qualitative research interviews. *Sociological Research Online*, 21(2), 103-117.
- Lobe, B. (2017). Best practices for synchronous online focus groups. In R. S. Barbour & D. L. Morgan (Eds.), *A new era in focus group research* (1st ed., pp. 227-250). London: Palgrave Macmillan.
- Lobe, B., Morgan, D., & Hoffman, K. A. (2020). Qualitative data collection in an era of social distancing. *International Journal of Qualitative Methods*, 19, 1-8.
- Mashayekhi, R. (2020, 16 June 2020). Zoom's stock is now up nearly 250% this year. It has Goldman Sachs in its sights next. Retrieved on 7 January, 2021 from <a href="https://fortune.com/2020/06/16/zoom-stock-coronavirus-goldman-sachs/">https://fortune.com/2020/06/16/zoom-stock-coronavirus-goldman-sachs/</a>
- Matthews, K. L., Baird, M., & Duchesne, G. (2018). Using online meeting software to facilitate geographically dispersed focus groups for health workforce research. *Qualitative Health Research*, 28(10), 1621-1628.
- Merriam, S. B. (2009). Qualitative research: A guide to design and implementation. California: Jossey Bass.
- Microsoft Corporation. (2021a). *Enable real-time transcription and translation in Skype meeting broadcast*. <a href="https://support.microsoft.com/en-us/office/enable-real-time-">https://support.microsoft.com/en-us/office/enable-real-time-</a>
  - transcription-and-translation-in-skype-meeting-broadcast-266efc46-325a-409d-8879-65c3123401dd
- Microsoft Corporation. (2021b). Get the most out of Skype. https://www.skype.com/en/features/
- Microsoft Corporation. (2021c). Languages. https://www.microsoft.com/en-us/translator/business/languages/

- Microsoft Corporation. (2021d). Security and Skype for business online. Retrieved on 10 January, 2021 from <a href="https://docs.microsoft.com/en-us/skypeforbusiness/optimizing-your-network/security-guide-for-skypefor-business-online">https://docs.microsoft.com/en-us/skypeforbusiness/optimizing-your-network/security-guide-for-skypefor-business-online</a>
- Microsoft Corporation. (2021e). *Skype (Version 8.72.0.94)*. Washington: Microsoft Corporation. https://www.skype.com/en/
- Microsoft Corporation. (2021f). Skype Translator. https://www.skype.com/en/features/skype-translator/
- Microsoft Research (Producer). (2016, 18 August 2016). *Skype Translator: Breaking down language barriers*. https://www.youtube.com/watch?v= VJ C521an8
- Morrison, D., Lichtenwald, K., & Tang, R. (2020). Extending the online focus group method using web-based conferencing to explore older adults online learning. *International Journal of Research & Method in Education*, 43(1), 78-92.
- O'Donnell, L. (2020, 18 November). *Cisco Webex 'ghost' flaw opens meetings to snooping*. Retrieved on 9 June, 2021 from https://threatpost.com/cisco-webex-flaw-snooping/161355/
- O'Flaherty, K. (2020, 5 June, 2020). *Zoom's security nightmare just got worse: But here's the reality*. Retrieved on 9 January, 2021 from <a href="https://www.forbes.com/sites/kateoflahertyuk/2020/06/05/zooms-security-nightmare-just-got-worse-but-heres-the-reality/?sh=510f81521316">https://www.forbes.com/sites/kateoflahertyuk/2020/06/05/zooms-security-nightmare-just-got-worse-but-heres-the-reality/?sh=510f81521316</a>
- Office for Protection of Human Subjects. (2021). *HIPAA PHI: Definition of phi and list of 18 identifiers*. Retrieved on 14 January, 2021 from https://cphs.berkeley.edu/hipaa/hipaa18.html
- Official Journal of the European Union. (2016). Regulation (EU) 2016/679 of the European Parliament and of the council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing directive 95/46/EC (general data protection regulation). Europe: *The European Parliament And The Council Of The European Union*. Retrieved on 17 June, 2021 from https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679
- Otter.ai. (2021a). Otter plans. Retrieved on 5 January, 2021 from https://otter.ai/pricing
- Otter.ai. (2021b). *Supported languages*. Retrieved on 7 June, 2021 from <a href="https://help.otter.ai/hc/en-us/articles/360047247414-Supported-languages">https://help.otter.ai/hc/en-us/articles/360047247414-Supported-languages</a>
- Otter.ai. (2021c). *Three ways to start and transcribe your conversations*. Retrieved on 9 January, 2021 from https://otter.ai/starter-guide?article=generateNotes
- Patel, T. Y., Bedi, H. S., Deitte, L. A., Lewis, P. J., Marx, M. V., & Jordan, S. G. (2020). Brave new world: Challenges and opportunities in the COVID-19 virtual interview season. *Academic Radiology*, 27(10), 1456-1460.
- Reinicke, C. (2020, 25 March 2020). Zoom video has seen its stock spike more than 100% since January as coronavirus pushes millions to work from home (ZM). *Market Insiders*. Retrieved on 17 June, 2021 from <a href="https://markets.businessinsider.com/news/stocks/zoom-stock-price-surged-coronavirus-pandemic-video-work-from-home-2020-3-1029023594">https://markets.businessinsider.com/news/stocks/zoom-stock-price-surged-coronavirus-pandemic-video-work-from-home-2020-3-1029023594</a>
- Reñosa, M. D. C., Mwamba, C., Meghani, A., West, N. S., Hariyani, S., Ddaaki, W., . . . McMahon, S. (2021). Selfie consents, remote rapport, and Zoom debriefings: Collecting qualitative data amid a pandemic in four resource-constrained settings. *BMJ Global Health*, 6(1), e004193.
- Roberts, J. K., Pavlakis, A. E., & Richards, M. P. (2021). It's more complicated than it seems: Virtual qualitative research in the COVID-19 era. *International Journal of Qualitative Methods*, 20, 1-13.
- Romiszowski, A., & Mason, R. (1996). *Computer-mediated communication*. In D. Jonassen & M. Driscoll (Eds.), Handbook of research for educational communications and technology (2nd ed., pp. 397-431). New York: Routledge.
- Scroxton, A. (2020, 18 June). Cisco patches dangerous Webex vulnerability. ComputerWeekly.com Retrieved on 17 June, 2021 from <a href="https://www.computerweekly.com/news/252484797/Cisco-patches-dangerous-Webex-vulnerability#:~:text=CVE%2D2020%2D3347%20bug%20enables,from%20within%20Cisco's%20Webex%20service&text=Cisco%20is%20moving%20to%20patch,potentially%20valuable%20or%20damaging%20content.Servick, K., Cho, A., Guglielmi, G., Vogel, G., & Couzin-Frankel, J. (2020, 16 March 2020). *Updated: Labs go quiet as researchers brace for long-term coronavirus disruptions*. Retrieved on 3 January, 2021 from https://www.sciencemag.org/news/2020/03/updated-labs-go-quiet-researchers-brace-long-term-coronavirus-disruptions">https://www.sciencemag.org/news/2020/03/updated-labs-go-quiet-researchers-brace-long-term-coronavirus-disruptions</a>
- Shadiev, R., Wu, T. T., Sun, A., & Huang, Y. M. (2018). Applications of speech-to-text recognition and computer-aided translation for facilitating cross-cultural learning through a learning activity: Issues and their solutions. *Educational Technology Research and Development*, 66(1), 191-214.
- Singh, R., & Awasthi, S. (2020). Updated comparative analysis on video conferencing platforms-Zoom, Google Meet, Microsoft Teams, Webex Teams and Gotomeetings. *EasyChair Preprint*, 4026, 1-9.
- Siti Fatimah, B. (2010). Qualitative versus quantitative research strategies: Contrasting epistemological and ontological assumptions. *Jurnal Teknologi*, 17(28), 17–28.
- Sullivan, J. R. (2012). Skype: An appropriate method of data collection for qualitative interviews? The Hilltop

- Review, 6(1), 54-60.
- Teti, M., Schatz, E., & Liebenberg, L. (2020). Methods in the time of COVID-19: The vital role of qualitative inquiries. *International Journal of Qualitative Methods*, 19, 1-5.
- Tiong, W. N., & Sim, A. F. S. F. (2020). Web-based seminar-new source of qualitative study: Data collection during the pandemic of COVID-19. SEISENSE *Journal of Management*, 3(6), 50-64.
- Tobin, A. (2015). Is Google translate good enough for commercial websites? A machine translation evaluation of text from English websites into four different languages. *Reitaku Review*, 21, 94-116.
- Tuttas, C. A. (2015). Lessons learned using web conference technology for online focus group interviews. *Qualitative Health Research*, 25(1), 122-133.
- United State Federal Communications Commission. (2019, 30 December 2019). *Voice over internet protocol* (VoIP). <a href="https://www.fcc.gov/consumers/guides/voice-over-internet-protocol-voip#:~:text=Voice%20over%20Internet%20Protocol%20(VoIP)%20is%20a%20technology%20for%20communicating,using%20an%20Internet%20connection%20instead.
- World Health Organization. (2020). *COVID-19 strategy update*. Geneva, Switzerland: World Health Organization.
- Zeti Azreen, A., & Kamaruzzaman, A. M. (2020). Knowledge, attitude on health practices of university students and staffs during the COVID-19 pandemic in Malaysia. *The Journal of Society and Media*, 4(2), 367-384.
- Zoom Video Communications Inc. (2020, 15 October 2020). *Zoom Security White Paper*. <a href="https://support.zoom.us/hc/en-us/articles/201362063-Security-White-Paper">https://support.zoom.us/hc/en-us/articles/201362063-Security-White-Paper</a>
- Zoom Video Communications Inc. (2021a). *Choose a plan find the right solution for your needs*. <a href="https://zoom.us/pricing#:~:text=Zoom%20offers%20a%20full%2Dfeatured,duration%20of%2024%20hours%20maximum">https://zoom.us/pricing#:~:text=Zoom%20offers%20a%20full%2Dfeatured,duration%20of%2024%20hours%20maximum</a>.
- Zoom Video Communications Inc. (2021b, 27 May, 2021). Language interpretation in meetings and webinars. <a href="https://support.zoom.us/hc/en-us/articles/360034919791-Language-interpretation-in-meetings-and-webinars">https://support.zoom.us/hc/en-us/articles/360034919791-Language-interpretation-in-meetings-and-webinars</a>
- Zoom Video Communications Inc. (2021c, 11 January, 2021). *Using audio transcription for cloud recordings*. <a href="https://support.zoom.us/hc/en-us/articles/115004794983-Using-audio-transcription-for-cloud-recordings-transcription-for-cloud-recordings-">https://support.zoom.us/hc/en-us/articles/115004794983-Using-audio-transcription-for-cloud-recordings-transcri
- Zoom Video Communications Inc. (2021d). *Zoom video communications (Version 5.6.6)*. California: Zoom Video Communications, Inc. Retrieved on 17 June, 2021 from https://zoom.us/
- Zorz, Z. (2020, 19 November, 2020). *Cisco Webex vulnerabilities may enable attackers to covertly join meetings*. <a href="https://www.helpnetsecurity.com/2020/11/19/cisco-webex-vulnerabilities-attackers-covertly-join-meetings/">https://www.helpnetsecurity.com/2020/11/19/cisco-webex-vulnerabilities-attackers-covertly-join-meetings/</a>