

# Conducting Research Using Online Workshops During COVID-19: Lessons for and Beyond the Pandemic

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## Abstract

Social distancing rules in the time of the COVID-19 pandemic have necessitated a move to online research for many social science researchers. In moving data collection online, academic literature on Internet-mediated research has resurfaced and been enriched, providing researchers with a useful resource when planning data collection online. In sharp contrast, there is limited published work for online workshops, indicating new opportunities for developing an evidence base for this increasingly important approach to data generation.

## Keywords

online research, online workshops, workshop methodology, health research, online qualitative research

## Introduction

There are important lessons to take forward from the move of research to the online environment during the COVID-19 pandemic, opening new avenues for research and potential to develop new methodological approaches. The current COVID-19 pandemic and ensuing restrictions on movement have adversely impacted scientific research worldwide (Harper et al., 2020). This includes qualitative social science research, which depends on careful attention to human interactions and their environments to be able to produce meaningful insights (Doing Qualitative Research, 2015). Online research has become increasingly popular in the past two decades, and it may also be an attractive option for researchers attempting to overcome challenges posed by the pandemic (Lupton, 2020), including in the context of workshop discussions.

There are multiple potential foci for workshops, which can be generalised into three broad areas: workshops to achieve a goal, (e.g., in the production of guidelines); workshops as a practice, in which the focus is on the workshop itself as a form and its outcomes, (e.g., workshops as a teaching delivery tool and the outcomes of students); and lastly, workshops as a research methodology where the aim of the workshop is to fulfil a research purpose, usually by generating data on the

research topic (Omgreen & Levinsen, 2017). This third perspective is the focus of this article, as our own enquiries on the subject were driven by the need to move workshops online as part of a programme of research we are involved in that aims to develop recommendations for the longer term sustainability of prescribing safety interventions in primary care in England (Avery et al., 2012; Medicine Safety and Effective Healthcare Research, 2017). In searching for relevant evidence on conducting workshops online, specifically relating to workshops conducted for research, we found that the literature was emerging (e.g., Tobin et al., 2020; Raider-Roth et al., 2021) in view of the current pandemic and the need to move

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social science research online. This indicates a positive development towards filling a gap in the knowledge of online workshops as previously identified by [Ormgreen & Levinsen \(2017\)](#) which we would also like to build on.

In this article, we explore some of the challenges and opportunities associated with hosting online workshops and offer potential lessons for those engaged in social science research to take forward during and beyond the COVID-19 era. In extracting the lessons outlined in this article, we combine a literature review of the topic with reflections on our experience of moving workshops online, including amending research protocols for institutional review boards (IRB). Additionally, we draw from the knowledge and experience gathered from running an interactive conference session on the topic of online workshops at the recent NVIVO virtual conference ([QSR International, 2020](#)).

## Challenges and Opportunities

Whilst a myriad of resources exists for gathering data in one-to-one virtual interviews ([Gray, 2020](#); [Iacono, 2016](#); [Nehls et al., 2015](#); [Salmons, 2015](#)), the same cannot be said for data collection involving group participants, much less so for interactive group discussions such as workshops. Although a variety of researchers have used workshops as a data collection method (e.g., [Leysn et al., 2018](#); [Tarr et al., 2018](#)), the term ‘workshop’ remains poorly defined as a concept from an academic perspective. In the context of this article, research workshops refer to the gathering of a group of people to either learn or problem solve in order to contribute and generate data to answer the goal(s) of the workshop, on which data of the process and perspective of participants are collected for research purposes ([Ormgreen & Levinsen, 2017](#)).

Workshops as a research methodology allow for the collection of data on the research topic(s) in question, particularly on processes involving future planning such as organisational change and design ([Ormgreen & Levinsen, 2017](#)). Pertinent data from workshops are not only the content of discussions but may also include observations of participant interactions and artefacts produced by participants in carrying out group tasks. These findings then feed into the particular research domain of the study, often with the aim of influencing future processes. As data on participant interaction and workshop artefacts are key, moving workshops online needs careful consideration by the research team, with a particular focus on the impact on data quality ([Dodds & Hess, 2020](#)).

As the literature on online workshops is slowly emerging, researchers looking to conduct online workshops can also make use of some recent literature on online focus groups, although it must be noted that workshops and focus groups are distinct research methods. An important difference between focus groups and workshops lies in the interactive and participatory nature of workshops ([Ormgreen & Levinsen, 2017](#)). Indeed, it has been said that focus groups face the limitation of a structured and formal environment that may impact adversely upon the contribution of

those less confident compared to other participants ([Estacio & Karic, 2016](#)). Still, literature on online focus groups ([Fox, 2017](#); [Tuttas, 2015](#)) is useful for moving workshops into virtual environments, offering much needed practical pointers such as selecting web conferencing platforms and recruitment methods. However, we have found that issues unique to online workshops remain unclear in the literature – for example, producing workshop artefacts using online platforms and its implications for researchers and participants that this article will further explore.

## Key Lessons for Conducting Online Workshops

Beginning April 2020, almost half of the UK population were working from home, a significant increase compared to 30% of the population in the previous year ([Office for National Statistics, 2020](#)). Working remotely, home schooling and other physical distancing measures have dramatically increased the use of web conferencing systems, most notably the software Microsoft Teams™ and Zoom Video Communications Inc. (Zoom™) ([Hacker, 2020](#)). A review of web conferencing platforms has been usefully compiled by other scholars, summarising the varying functions and payment options (see [Lobe et al., 2020](#)). Whilst web conferencing has filled an urgent alternative to face-to-face interactions so as to enable social distancing measures to be maintained, particularly allowing for quick adaptation of interview methods, we found that it is less clear whether more interactive group interview methods such as workshops may be readily adaptable to online data collection with such platforms.

Conducting workshops online via web conferencing systems has its advantages, most commonly by saving both time and costs as the workshop can be run without having to travel ([Woodyatt et al., 2016](#)). This may support democratisation of research, providing possibilities for participation for otherwise inaccessible groups such as those living in rural locations, or those with family commitments or health issues and/or disabilities, and gives more opportunities for the more financially challenged researcher, such as those in low- and middle-income countries (LMIC) and those in their early careers ([Iacono et al., 2016](#)).

However, there are also challenges, both practical and methodological. In running workshops online, sample selection may be biased to those with internet access, an issue perhaps most impactful in LMICs where it is known that, in 2017, only 40% of the population were able to access the internet ([International Telecommunication Union \(ITU\) World Telecommunication, 2017](#)). Among these individuals, it may be likely that a lower number would be able to contribute to synchronous online discussions via web conferencing systems as this technology typically needs broadband access. Moreover, the use of web conferencing systems requires high bandwidth, likely further hampering participation. Some scholars have mitigated for online data collection by sending internet routers to participants in LMICs, as shared by Gittings and Ralayo at a recent conference ([QSR International, 2020](#)).

As in the face-to-face context, conducting workshops online may also provide researchers with the option to record the workshop session, a function available on most web conferencing systems. While this may prove useful when analysing data, especially in studying participant interaction, we found that limited literature exists to offer guidance on the ethical implications for recording online. Therefore, researchers would do well to keep in mind the principles of respect for persons, beneficence, and justice as outlined in the Belmont Report ([National Commission for the Protection of Human Subjects of Biomedical and Behavioural Research, 1979](#)) and liaising with their local IRB. The ethical implications are perhaps similar to studies using video-based methods for data collection, of which participant privacy and confidentiality are of paramount importance as individual participants may be identifiable ([Derry et al., 2010](#); [Foley, 2021](#)). This necessitates a thorough review of the study by the relevant IRB, stating clearly the intention to record online workshops and potentially working with the IRB to select a suitable recording tool. Relevant issues commonly attended to by IRBs include participant consent for recording, use and storage of the recording, particularly who will be able to view or hear the recording and the possibility for participants to review the recording if it involves sensitive material ([Derry et al., 2010](#)).

Further ethical implications to consider include the possibility of asking for consent for recording among participants in a workshop, prompting the researcher to omit non-consenting participants from audio- and video-recording without impacting on the recording of those who have consented. Alternatively, the researcher could make it clear in obtaining consent that recordings cannot be removed after participation, limiting the possibility of varied consent for recording. In such cases, a clear confidentiality statement needs to be included in participant information sheets and consent forms. Such information sheets should also prohibit recording the workshop session using participants' own devices ([Lobe et al., 2020](#)). It needs to be made clear that online recording can only be done by or with explicit permission of the moderator(s) of the workshop, although information sheets may also highlight that it cannot be guaranteed that other participants in the workshop will adhere to this.

The researcher must be mindful of ethical issues pertinent to conducting data collection online, such as others inadvertently appearing in video recordings ([Daniels et al., 2019](#)), for example, family members, particularly those deemed vulnerable by IRBs. Storage of recordings of the online workshop has practical implications as well, given that recording files are usually very large in size and may need to be stored on cloud-based servers, bringing with it additional security implications for the researcher to consider ([Lobe et al., 2020](#)). If deciding to record online workshops, researchers may consider whether to use software external to the web conferencing system such as Screencastify®, or alternatively the web conferencing system's built-in function. It is

important that researchers are well-versed in the recording facility's privacy policy as recordings are often stored on the host provider's platform (i.e., cloud storage), such as with Zoom™ and Blackboard Collaborate™ Ultra, which can then be downloaded to the researcher's computer for secure storage. The recording stored on the host provider's platform can be password-protected and made available only to specified people, giving the researcher options for enhancing data security. Related to this is the matter of data destruction, where researchers should ensure that the selected virtual platform does not store recordings for market research purposes, or at least to be well-informed about this, and deciding how long recordings should be stored and ensuring the appropriateness of methods for data destruction.

Other sources of data that may be collected during online workshops include researcher field notes, a valuable resource in conducting workshops ([Carnevale et al., 2015](#)). Text and emoticons in chat boxes may be possible to record during online workshops, along with audio recordings of the workshop using an encrypted external device, and artefacts produced by participants such as white board discussions. Whilst these approaches all come with their own ethical implications, these varying sources of evidence potentially enrich the data and offer opportunities for triangulation, contributing to methodological rigour.

Furthermore, rapport amongst participants as well as between participants and the researcher is also impacted when moving workshops online, although this will vary from person to person, their familiarity with the web conferencing system used, digital literacy and internet connection ([Gray, 2020](#)). Researchers may apply proactive strategies in supporting the success of an online workshop, which additionally builds researcher-participant rapport. Communicating regularly with the participants before the workshop to ensure that they are prepared and have addressed technical issues as far as possible, for example, relating to camera use, internet connection and having the necessary software installed, can increase participants' trust of the researcher. The researcher could also consider having technical and/or administrative support on hand on the day of the workshop in case of any technical difficulties, highlighting the support available to participants at the start of the session and discussing ground rules ([Daniels et al., 2019](#)).

Nevertheless, workshops may require some pre-workshop work that could range from reading information of the research topic to watching introductory presentations. In addition to giving participants sufficient background to participate effectively in the workshop, a study has used the pre-workshop reading as a strategy to mitigate for the need to shorten the length of the workshop in moving it online to prevent screen fatigue and resulting disengagement ([Tobin et al., 2020](#)). Asking for frank feedback from participants after the workshop session potentially increases participant trust and provides a learning opportunity for the researcher in planning for future workshops.

How rapport is impacted by the online environment may also depend on the research topic as it has been reported that online research involving potentially sensitive topics such as sexual issues and chronic skin conditions may provide the participant a degree of anonymity when conducted online (Bouchard, 2016; Fox, 2017). For studies involving sensitive topics, it may be important to work with participants beforehand to ensure they are in a physically private and safe space (Sipes et al., 2020), with the possibility of using headphones to help maintain confidentiality. Additionally, the lack of physical presence can help to reduce status differences and social desirability (Fox, 2017), which may facilitate more authentic participant interactions, for example in studies involving participants from various organisational levels.

Nevertheless, rapport can be vital in qualitative research (Prior, 2018), therefore time and effort taken to build this is worth the investment by the researcher. This is consistent with the emerging literature on online workshops run during the COVID-19 pandemic (Raider-Roth et al., 2021; Tobin et al., 2020), with researchers taking the time to build rapport via ice-breaking activities at the start of or before the workshop. The extent to which researchers build rapport amongst the workshop participants depend on the length and nature of the research. For example, in a longitudinal study involving multiple cohorts of participants, this could require something extensive and in-depth such as asking for photos of participants along with some statements to show their personality and the use of asynchronous discussion boards to enable informal introductions (Raider-Roth et al., 2021).

Among the most important data for researchers conducting workshops are those that arise from participant interaction, bifurcation points and reasons for choices, researcher field notes, and artefacts produced in workshops to represent participants' perspectives (Binet et al., 2019; Orngreen & Levinsen, 2017). Such data rely upon careful attention of the researcher to participant interaction and researcher representation, both of which are impacted by online research (Fox, 2017; Salmons, 2016). Moreover, participant engagement can be difficult to achieve with online workshops where participants run the risk of 'Zoom fatigue' (Hacker, 2020; Wiederhold, 2020) in addition to the potential for poor rapport building, increasing the likelihood of attrition during the workshop (Fox, 2017).

## Novel Approaches in Research

In meeting the needs of moving workshops online, some researchers have explored and used a number of online platforms to run the workshop and increase or maintain engagement. Varying digital platforms are used in online workshops to pose questions and brainstorm, most commonly Padlet™, GoogleDrive™, and Edmodo™ (Raider-Roth et al., 2021; Tobin et al., 2020). These platforms provide flexibility to the researcher in deciding whether to run the workshops synchronously, asynchronously, or a mix of both.

Furthermore, whiteboarding tools such as Miro™, Mural™, and Stormboard™ hold potential for studies using online workshops as they provide structure and collaboration to the illustrative process (Bower, 2015), with some tools supporting the use of video streaming or text chats during its use. This illustrative process facilitates visualisation of issues and concepts, potentially enhancing both participation and engagement across audiences and may play an important role in decision-making processes (Swink & Speier, 1999). Interactive tools may support participant engagement, provide novel opportunities for interaction, and present options in providing artefacts for collection to the researcher such as virtual post-its, mind mapping and voting functions. Online platforms such as Kahoot© or Mentimeter™ may also be used for ice-breaking activities at the start of the workshop to develop trust and comfort for all involved in the online workshop, using informal activities such as games or polls to build rapport. Indeed, a study has found benefits of interactivity for planning processes (Salter et al., 2009), particularly for interaction using computer-based materials that may enhance participation of the public (Conroy & Gordon, 2004; Mukhtarov et al., 2018). It has been found from a public policy and educational perspective that computer-based methods may enhance participation by providing an informal and less institutionalised setting for discussion and contribution of all involved (Conroy & Gordon, 2004).

Positive outcomes have also been noted by educators who have explored the utility of online whiteboarding for virtual classes (Bodnenko et al., 2020; Wilkie & Jones, 2010; Zaqoot & Oh, 2018). From this perspective, it has been suggested that online whiteboarding develops design thinking skills (Zaqoot & Oh, 2018), cooperative learning (Bodnenko et al., 2020) and enables educators to meet diverse learning needs (Wilkie & Jones, 2010). The design thinking process may be important for product designers in considering the perspectives of its users and this thinking process may be applicable across disciplines such as governmental services, education and healthcare (Razzouk & Shute, 2012). In their use of online whiteboarding in a digital innovation course, Zaqoot and Oh (2018) found that online whiteboarding acted as a powerful platform in the co-construction of knowledge amongst learners while promoting collaboration, additionally meeting varied learning needs of a diverse audience, this claim was also supported by Wilkie & Jones (2010).

This collaborative co-construction of knowledge draws parallels with the aim of workshops as a research methodology (Orngreen & Levinsen, 2017), indicating the utility of online whiteboarding in enhancing engagement for online workshops. This is supported by others who have used online whiteboarding during this pandemic in running online workshops, for instance, in user experience research (Singh, 2020) and design thinking (Ribeiro et al., 2020) workshops. For researchers with the option of asynchronous data collection, whiteboarding tools may also help to bridge inequalities as they can also be used at the convenience of



participants, contributing to ideas on the platform when and where it suits them, offering more opportunities for those who may find it more challenging to access the internet (Dahlstrom-Hakki et al., 2020).

However, it must be noted that much of the literature specific to using whiteboarding tools in workshops centre around the means and practice perspective and not as a research methodology, suggesting the potential for developing our knowledge in this area from a scholarly perspective. Nonetheless, this gap in knowledge highlights the challenge of adapting to changing contexts and rapid technology developments in higher education institutions (HEI) as whiteboarding tools may not be widely known amongst academics (Bower, 2015; Ribeiro et al., 2020). The discussion and scholarly development in this area would facilitate understanding and use of whiteboarding tools for online workshops but also potentially for remote working, teaching and learning in academia.

Key concerns for IRBs reviewing studies using whiteboarding tools are likely to centre on data privacy and ownership, of which different tools vary and would need careful consideration by the researcher. Given time, the wider use and scholarly discussion of whiteboarding tools could develop its capacity to be used for academic purposes, for instance, in the development of Zoom's privacy and security settings since being widely used in HEIs in the COVID-19 pandemic (Fung, 2020). As academic staff adjust to home or hybrid working, there has been a rise in investment of HEIs in web conferencing platforms such as Microsoft Teams™ and Zoom™ Enterprise (Hacker et al., 2020), and with further exploration there may be opportunities for whiteboarding tools to help enhance teaching, learning and research work at such institutes for the longer term.

## Concluding Thoughts

Whilst the COVID-19 pandemic has disrupted social science research, new opportunities for researchers have emerged to enhance online research and benefit both researchers and participants in democratising research processes. Additional tools such as whiteboarding for online qualitative data collection may further open up new avenues for research, potentially increasing engagement and the range of data able to be obtained through online research. In moving forward in a post-COVID world, collecting interactive group data online, such as workshops, presents academia with new and exciting pathways to technology-enabled futures.

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## References

- Avery, A. J., Rodgers, S., Cantrill, J. A., Armstrong, S., Cresswell, K., Eden, M., Elliott, R. A., Howard, R., Kendrick, D., Morris, C. J., Prescott, R. J., Swanwick, G., Franklin, M., Putman, K., Boyd, M., & Sheikh, A. (2012). A pharmacist-led information technology intervention for medication errors (PINCER): A multicentre, cluster randomised, controlled trial and cost-effectiveness analysis. *The Lancet*, 379(9823), 1310-1319.
- Binet, A., Gavin, V., Carroll, L., & Arcaya, M. (2019). Designing and facilitating collaborative research design and data analysis workshops: Lessons learned in the healthy neighborhoods study. *International Journal of Environmental Research and Public Health*, 16(3), 324.
- Bodnenko, D. M., Kuchakovska, H. A., Proshkin, V. V., & Lytvyn, O. S. (2020). Using a virtual digital board to organize student's cooperative learning. *AREdu*, 357-368.
- Bouchard, K. (2016). Anonymity as a double-edge sword: Reflecting on the implications of online qualitative research in studying sensitive topics. *The Qualitative Report*, 21(1), 59-67.
- Bower, M. (2015). A typology of Web 2.0 learning technologies. *British Journal of Educational Technology*, 47(4), Educause, feb, 8.
- Carnevale, FA, Macdonald, ME, Razack, S, & Steinert, Y (2015). Promoting cultural awareness: A faculty development workshop on cultural competency. *The Canadian Journal of Nursing Research*, 47(2), 18-40.
- Conroy, M. M., & Gordon, S. I. (2004). Utility of interactive computer-based materials for enhancing public participation. *Journal of Environmental Planning and Management*, 47(1), 19-33.
- Dahlstrom-Hakki, I., Alstad, Z., & Banerjee, M. (2020). Comparing synchronous and asynchronous online discussions for students with disabilities: The impact of social presence. *Computers & Education*, 150, 103842.
- 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, 1609406919885786. <https://doi.org/10.1177/1609406919885786>
- Derry, S. J., Pea, R. D., Barron, B., Engle, R. A., Erickson, F., Goldman, R., Hall, R., Koschmann, T., Lemke, J. L., Sherin, M. G., & Sherin, B. L. (2010). Conducting video research in the learning sciences: Guidance on selection, analysis, technology, and ethics. *Journal of the Learning Sciences*, 19(1), 3-53. <https://doi.org/10.1080/10508400903452884>
- Dodds, S., & Hess, A. C. (2020). Adapting research methodology during COVID-19: Lessons for transformative service research. *Journal of Service Management*, 21(2).
- Doing Qualitative Research. (2015). *What You Can (and Can't) Do with Qualitative Research*. SAGE.

- Estacio, E. V., & Karic, T. (2016). The world café: An innovative method to facilitate reflections on internationalisation in higher education. *Journal of Further and Higher Education*, 40(6), 731–745.
- Foley, G. (2021). Video-based online interviews for palliative care research: A new normal in COVID-19? *Palliative Medicine*, 35(3), 625–626.
- Fox, F. (2017). Meeting in virtual spaces: Conducting online focus groups. In *Collecting qualitative data: A practical guide to textual, media and virtual techniques* (pp. 275–299). Cambridge University Press.
- Fung, B. (2020). Zoom makes privacy and security fixes as millions flock to service. CNN Business. Retrieved November 15, 2020 from <https://edition.cnn.com/2020/04/23/tech/zoom-update/index.html#:~:text=The%20update%2C%20known%20as%20Zoom,point%20A%20to%20point%20B>
- Gray, L. M., Wong-Wylie, G., Rempel, G. R., & Cook, K. (2020). Expanding qualitative research interviewing strategies: Zoom video communications. *The Qualitative Report*, 25(5), 1292–1301.
- Hacker, J., Brocke, J. V., Handali, J., Otto, M., & Schneider, J. (2020). Virtually in this together - how web-conferencing systems enabled a new virtual togetherness during the COVID-19 crisis. *European Journal of Information Systems*, 29(5), 563–584.
- Harper, L., Kalfa, N., Beckers, G. M. A., Kaefer, M., Nieuwhof-Leppink, A. J., Fossum, M., Herbst, K. W., & Bagli, D., & ESPU Research Committee. (2020). The impact of COVID-19 on research. *Journal of Pediatric Urology*, 16(5), 715–716.
- Iacono, V. L., Symonds, P., & Brown, D. H. K. (2016). Skype as a tool for qualitative research interviews. *Sociological Research Online*, 21(2), 103–117.
- International Telecommunication Union (ITU) World Telecommunication/ICT Indicators Database (2017). Individuals using the Internet (% of population) - low & middle income. Retrieved November 15, 2020 from <https://data.worldbank.org/indicator/IT.NET.USER.ZS?locations=XO>
- Leyns, C. C., De Maeseneer, J., & Willems, S. (2018). Using concept mapping to identify policy options and interventions towards people-centred health care services: A multi stakeholders perspective. *International Journal for Equity in Health*, 17(1), 177–214.
- Lobe, B., Morgan, D., & Hoffman, K. A. (2020). Qualitative data collection in an era of social distancing. *International Journal of Qualitative Methods*, 19, 1609406920937875.
- Lupton, D. (2020). Doing fieldwork in a pandemic. *Crowd-sourced document*. <https://docs.google.com/document/d/1cGjGABB2h2qbduTgfqribHmog9B6P0NvMgVuiHZCl8/mobilebasic>.
- Medicine Safety and Effective Healthcare Research. (2017). Avoiding patient harm through the application of prescribing safety indicators in English general practices (PRoTeCT). Retrieved November 15, 2020 from <https://www.nottingham.ac.uk/research/groups/medicinesafetyeffectivehealthcare/protect-study/index.aspx>
- Mukhtarov, F., Dieperink, C., & Driessen, P. (2018). The influence of information and communication technologies on public participation in urban water governance: A review of place-based research. *Environmental Science & Policy*, 89, 430–438.
- National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. (1979). The Belmont report: Ethical principles and guidelines for protection of human subjects of research. Retrieved November 15, 2020 from [https://www.hhs.gov/ohrp/sites/default/files/the-belmont-report-508c\\_FINAL.pdf](https://www.hhs.gov/ohrp/sites/default/files/the-belmont-report-508c_FINAL.pdf)
- Nehls, K., Smith, B. D., & Schneider, H. A. (2015). Video-conferencing interviews in qualitative research. In *Enhancing qualitative and mixed methods research with technology* (pp. 140–157). IGI Global.
- Office for National Statistics. (2020). Coronavirus and homeworking in the UK: April 2020. Retrieved November 15, 2020 from <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/coronavirusandhomeworkingintheuk/april2020#coronavirus-and-homeworking-in-the-uk-data>
- Omgreen, R., & Levinsen, K. (2017). Workshops as a research methodology. *The Electronic Journal of e-Learning*, 15(1), 70–81.
- Prior, M. T. (2018). Accomplishing “rapport” in qualitative research interviews: Empathic moments in interaction. *Applied Linguistics Review*, 9(4), 487–511.
- QSR International. (2020). NVIVO virtual conference schedule. Retrieved November 15, 2020 from <https://www.qsrinternational.com/getattachment/nvivo-qualitative-data-analysis-software/Conference/NVivo-Virtual-Conference/Final-Conference-Schedule.pdf.aspx?lang=en-US>
- Raider-Roth, M., Gold, M., Brydon-Miller, M., & Dorph, G. Z. (2021). Moving toward a utopian future one step at a time: Taking our future creating workshop online. *Journal of Participatory Research Methods*, 2(1), 18689.
- Razzouk, R., & Shute, V. (2012). What is design thinking and why is it important? *Review of Educational Research*, 82(3), 330–348.
- Ribeiro, M. d. C. A., Nusselder, A., Brouwer, N., Gomes, N., & Lopes, N. (2020). An international student workshop on design thinking in time of corona: Redesigning an international event as an online interactive learning experience. *Innovative Teaching Methods: Practical Teaching in Higher Education*, 11–38.
- Salmons, J. (2015). *Qualitative online interviews: Strategies, design, and skills* (2nd ed.). SAGE Publications.
- Salmons, J. (2016). Preparing to collect data online. In J. Salmons (Ed.), *Doing Qualitative Research Online* (pp. 99–113). SAGE Publications.
- Salter, J. D., Campbell, C., Journeay, M., & Sheppard, S. R. J. (2009). The digital workshop: Exploring the use of interactive and immersive visualisation tools in participatory planning. *Journal of Environmental Management*, 90(6), 2090–2101.
- Singh, V. (2020). Workshops are now required to be conducted remotely. *Interactions*, 27(4), 52–54.
- Sipes, J. B., Mullan, B., & Roberts, L. D. (2020). Ethical considerations when using online research methods to study sensitive

- topics. *Translational Issues in Psychological Science*, 6(3), 235–239.
- Swink, M., & Speier, C. (1999). Presenting geographic information: effects of data aggregation, dispersion, and users. *Decision Sciences*, 30(1), 169–195.
- Tarr, J., Gonzalez-Polledo, E., & Cornish, F. (2018). On liveness: Using arts workshops as a research method. *Qualitative Research*, 18(1), 36–52.
- Tobin, C., Mavrommati, G., & Urban-Rich, J. (2020). Responding to social distancing in conducting stakeholder workshops in COVID-19 Era. *Societies*, 10(4), 98.
- Tuttas, C. A. (2015). Lessons learned using web conference technology for online focus group interviews. *Qualitative Health Research*, 25(1), 122–133.
- Wiederhold, B. K. (2020). Connecting through technology during the coronavirus disease 2019 pandemic: Avoiding “Zoom Fatigue”. *Cyberpsychology, Behavior, and Social Networking*, 23(7), 437–438.
- Wilkie, K. J., & Jones, A. J. (2010). Creative connections to school: teachers support the learning of students with chronic illness during absence. In *ACEC2010: Digital diversity. Conference proceedings of the Australian computers in education conference*, Melbourne, Australia, 6–9 April 2010.
- Woodyatt, C. R., Finneran, C. A., & Stephenson, R. (2016). In-Person versus online focus group discussions. *Qualitative Health Research*, 26(6), 741–749.
- Zaqoot, W., & Oh, L. B. (2018, November). Teaching design thinking using online whiteboarding in a graduate-level digital innovation course. In *Proceedings of the 26th international conference on computers in education*, Manila, Phillipines, 26–30 November 2018, pp. 573–582.