



Technical Report

Why do an online Change Laboratory?

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Editor: Brett Bligh

Citation: Bureau de Change Laboratory, volume 1, article 9

Received: 02/05/2023

Revised: 12/05/2023

Accepted: 12/05/2023

Online: 16/08/2023

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Abstract: This technical submission was created collaboratively, by a group of researchers united by shared interests and experiences in conducting research *online* using the Change Laboratory methodology. Our current contribution seeks to inform and engage colleagues, setting out a collaborative response to a relatively unsophisticated yet reflexive and timely question: *Why do an online Change Laboratory?*

Keywords: Online Change Laboratory.

1. Background

To us, it seems that this question could be interpreted in multiple ways: why should people become involved in an *online* Change Laboratory, as discrete from an onsite Change Laboratory; why should people become involved in an online *Change Laboratory*, as discrete from using



other online options; or why should people become involved in *any* type of research-intervention at all. As individual researcher-interventionists, who meet regularly to share our experiences and interests in online Change Laboratories, we also interpret this question in multiple ways, and we hope that our collaborative response reflects our diversity of thought (a closing section of this paper described how we worked in its production). We seek to encourage colleagues to further explore these and other questions about online Change Laboratories, and we call for others to join us in purposeful conversations to advance the methodology.

Figure 1, which is a link to a short video, provides an initial overview of the issue.



Figure 1: Why do an online Change Laboratory? A YouTube short video. See <https://www.youtube.com/shorts/i84nD7GYsHA>

2. What is an online Change Laboratory?

An online Change Laboratory is a research-intervention project that brings together a group of people using a digital platform, to identify and address a specific problem or challenge



in existing practices, through the Change Laboratory methodology. Online Change Laboratories follow an established methodology, similar to traditional onsite Change Laboratories, with the same principles of double stimulation and ascension from the abstract to the concrete, seeking to develop participants' expansive learning and engendering their transformative agency.

The purpose of an online Change Laboratory is to support participants' expansive learning efforts by creating an online workspace, where people can collaborate and conduct tasks to confront their failing activity. Spontaneous examples of expansivity are rare in work and learning practices, which sometimes justifies an intentional research-intervention. While double stimulation, expansive learning, and transformative agency are well-documented in face-to-face settings, they remain uncommon in online educational research.

An online Change Laboratory provides participants with digital arrangements to work expansively, to diagnose and redesign failing activity through double stimulation tasks. Online tools assist them in contributing to troublesome interactions, examining problematic and contradictory instabilities in failing activity, using and sharing online task stimuli and mirror data in safety. Participants use online tools to reflect on findings and prepare for subsequent workshops, becoming accustomed to raising problems and bringing in ideas when working together on tasks.

In summary, an online Change Laboratory is an emerging and promising methodology, that can be conducted online and that is commensurate with the principles of Activity Theory. It provides an approach for designing collaborative workspaces where researchers and participants can work expansively, engendering transformative agency by identifying and addressing specific problems or challenges using the Change Laboratory methodology.

3. Why might we need an online Change Laboratory?

The contemporary world faces many urgent challenges that require the development of new knowledge and activity systems. Many of these challenges involve social justice issues, where it is crucial to emphasise human subjectivities and transformative agency instead of technocratic solutions.

An online Change Laboratory project aims to provide a platform for geographically dispersed individuals to work together on these pressing issues in agentic ways. The online format allows some participants to balance their work, learning, and family commitments while avoiding the inconveniences, risks, and expenses of traditional onsite meetings. Online tools such as video conferencing software, instant messaging, and shared project management tools are used to facilitate remote collaboration.

Compared with more established, onsite approaches, the online Change Laboratory format enables a wider range of participants to join the collaborative space: those with caring and parenting responsibilities, multiple jobs, or limited capability to commit to travelling, are examples of those who have found online Change Laboratories to be accommodating. Additionally, the online format can present researcher-interventionists with a range of different options to capture and analyse data.

Ultimately, an online Change Laboratory aims to provide a means for groups to work expansively and collaboratively, towards positive change in their activity systems, and the development of their own transformative agency. Decisions by stakeholders to participate can be taken irrespective of their physical locations, and in ways which might be more sensitive to their other commitments and concerns.



4. What are the differences between an online and onsite Change Laboratory?

Originally, the Change Laboratory approach was developed for intense workshops in physical rooms, with comfortable seating and access to digital screens, flipcharts, and other useful resources. Video cameras on tripods would typically be in place to record the workshops.

Presently, online Change Laboratories tend to attempt to replicate some aspects of this design by bringing people together in online workshops using videoconferencing systems, sharing screens in real-time, allowing access to shared canvases and/or documents. However, some aspects—such as the many information surfaces typically used in an onsite Change Laboratory—can be challenging to replicate online, and may prove difficult for people to focus on, even if they are successfully replicated.

In an online Change Laboratory, interaction is mediated by technology such as Zoom or Teams. These and other mediating artefacts will be negotiated, learned, and instrumentalised by participants. To be usable and transformable online, these artefacts and the related tasks need to be designed, so that the concomitant implications for change can be shared, discursively adapted, and negotiated through online interactions.

The main difference between online and onsite Change Laboratories is the absence of interactive practice in the physical space. Furthermore, differences in participants' social conditions, internet connectivity, availability of digital devices, and technological confidence can affect how they interact with videoconferencing technologies and shared online tools, with implications for their equitable participation and feelings of physical separation. Conversely, some participants may appreciate lowered expectations of direct interactions, allowing them time to think before making their contributions.

5. What can be achieved in an online Change Laboratory?

The Change Laboratory approach can help stakeholders to analyse the root causes of practice problems and propose, test, and enact new solutions. This can result in new forms of collaboration, new artefacts, and new concepts to guide how issues are framed and understood. Ultimately, the goal is to design new activities with new objects that are capable of meeting contemporary challenges. Many of the activities which are being designed might be carried out using online means, like the research-intervention itself.

One benefit of conducting Change Laboratories online is that double-stimulation tasks can encourage participants to engage with institutional practices, expose conflicts, and enact change, while developing their sense of freedom and confidence to challenge the status quo. Having a specific online venue can help with this by providing some sense of separation from workplace territory while still being interwoven into the rhythms of everyday practices. For instance, history walls might be constructed to capture the insights and ideas generated by participants from different parts of the world.

Additionally, interacting online can help people view their own problematic conditions as stimuli for resistance, criticism, and development, and to recognize their own and each other's potential roles in enacting and sustaining change. Accessing and modifying online epistemic resources, if they can be reliably shared, can encourage participants to highlight evidence of failure and potential for change with each other.



Another advantage of conducting Change Laboratories online is that the process might be documented—for research purposes—more easily than with onsite Change Laboratories. Recording workshops through videoconferencing software is often simpler than dealing with multiple cameras and uploading files to a secure web platform. Moreover, a rich set of data can be generated and analysed using various Change Laboratory artefacts and workshop recordings.

6. What are the limitations?

The Change Laboratory methodology relies on close collaboration, critique, and knowledge development. It can be challenging for some individuals to come together online, and to develop the same sense of camaraderie as they might onsite. Additionally, there is increased potential for misunderstanding or poor synchronisation of meaning. Despite these challenges, online collaboration may be the only way for stakeholders to come together, and it can also be easier to maintain project momentum through regularly scheduled workshops.

Online collaboration presents several challenges, including accessing relevant examples of mirror data, mitigating technical and off-screen distractions, promoting spontaneity, ensuring fair participation, resolving interpersonal misunderstandings, and sustaining the direction of progress under pressure of many distractions. Researcher-interventionists will need to anticipate the need for individuals to attend to parenting, caring, work, or other commitments while avoiding distractions that could hinder their engagement in the project.

Collaboration on some online tasks can be hindered by practical constraints, such as the availability and accessibility of relevant examples of mirror data. Examples that might have been "around us", or more accessible in a physical setting, may not be as accessible in an online environment, particularly if it is some physical setting that is representative or constitutive of the problematic activity that the group finds challenging, and is seeking to confront.

The success of online Change Laboratories can be jeopardised by local factors for individual participants, such as an unreliable network or Wi-Fi connection, access to headphones, and the need to have a working understanding of the technological platforms being used for tasks. It is important to practise and test technology prior to workshops, yet this does not negate the possibility of something like a poor internet connection on the day, or an unscheduled software update, or a participant forgetting to charge a device. Upskilling on technology use in early workshops is therefore recommended. Ease of access and egress can also be a limitation; it may be easier for participants to leave an online workshop, than it would be to leave an onsite workshop.

Skilled facilitation by the researcher-interventionist is essential for online Change Laboratories. A notable challenge is engaging all participants online, particularly in large groups. It can be useful to create breakout rooms to ensure fair participation, although this can pose problems for recording participants working, and creating breakout rooms can be intimidating due to the fear of creating a split in the collegium. A model of "gallery-group-gallery" has been successful in some online Change Laboratories, where representatives of sub-groups mark the transitions between the plenary and breakout rooms: these representatives brief the wider group on their intent when leaving, and again on their progress when returning.



7. Can an online Change Laboratory be as interactive as an onsite Change Laboratory?

In some ways, online Change Laboratories can probably not be as interactive as onsite Change Laboratories. Information sharing can be accomplished, but managing multiple sources of information online (such as the "surfaces") can be quite difficult. It is also sometimes difficult to achieve full, qualitatively meaningful, and sustained intersubjectivity. We do need to develop new artefacts to better support such processes in the future.

And yet in other ways, an online Change Laboratory can be differently and more sustainably collaborative and interactive. For example, backchannels of text chat can facilitate collaboration, as can using a whiteboard or storing data online for working between sessions. Expansive progress is dependent on many variables, not least the motives and the existing intersubjectivity of participants. In the example above, which used the gallery-group-gallery model, interaction was effectively stimulated among participants, despite their being quite a large number.

Careful planning and facilitation are required, but we believe it is possible for an online Change Laboratory to be as interactive as an onsite Change Laboratory even if in slightly different ways. In some projects, participants have been very focused and willing to engage. If participants have a clear understanding from the beginning of the 'ground rules', particularly when working on tasks, it can lead to successful online collaboration. These include agreements about being muted and unmuted, about raising hands for questions or just openly speaking and challenging, about using emoticons and chat functions, and about respecting their own and each other's time.

8. How do you maintain engagement and motivation in an online Change Laboratory?

To maintain engagement and motivation in an online Change Laboratory, it is important to meet regularly, and to find a balance between synchronous workshops and asynchronous work in between. Ongoing collaboration in the background, at a low intensity, including in impromptu and spontaneous ways that suit participants themselves, can also be helpful.

Methodological development in an online setting should focus on increasing convenience and lowering risk for participants, promoting comfort with political confrontations, and ensuring leanness and accessibility of task stimuli and resources. If physical artefacts are related to problems, then the inclusion of online representations of these artefacts might be warranted. If hard offline resources are used in task designs, then online ways of sharing their progress and the concomitant implications can help with engagement.

Additionally, it is important to use a variety of relevant media, such as images, videos, and interactive tools like whiteboards and polls, to keep participants engaged in the tasks, and cognisant of the real activities they are dealing with. Careful planning of in-workshop and between-workshop tasks, as well as effective use of additional online tools, can enable collaboration and communication. A further possibility, that we have not considered in this current contribution, is a blended Change Laboratory, with alternate online and onsite workshops.



9. Summary

A tabulated summary of each question and our response is shown in Table 1, followed by a discussion of the potential implications, along with our proposed next steps as a collaborative group of online Change Laboratorians.

Table 1. Summary of each of our questions and responses.

Question	Response
1. What is an online Change Laboratory?	An online Change Laboratory provides a digital platform for researchers and participants to conduct a research-intervention online. It adopts the same principles as an onsite Change Laboratory, using online tools to diagnose and redesign failing activity.
2. Why might we need an online Change Laboratory?	Online Change Laboratories provide a platform for dispersed individuals to collaboratively address challenges in social practice. Remote collaboration tools aim to enable participation at distance, accommodating multiple commitments.
3. What are the differences between an online and onsite Change Laboratory?	Change Laboratory workshops were originally designed for physical rooms. Online Change Laboratories rely more on digital tools. These can limit nonverbal cues, and require additional design and facilitation to ensure participation and engagement.
4. What can be achieved in an online Change Laboratory?	Online interactions can stimulate stakeholders to change problematic activities, which might also be online, with participants' physical separation giving them confidence. Researchers can curate and analyse data differently.
5. What are the limitations?	Online Change Laboratories present challenges in accessing relevant examples of mirror data, spontaneous communication, building camaraderie, managing misunderstandings, mitigating technical and off-screen distractions, and anticipating other commitments for participants.
6. Can an online Change Laboratory be as interactive as an onsite Change Laboratory?	With careful planning and facilitation online Change Laboratories can be as interactive as onsite Change Laboratories, although in different ways. Tasks need to provoke and sustain intersubjectivity, using online tools such as videoconferencing, surfaces, and breakout rooms.
7. How do you maintain engagement and motivation in an online Change Laboratory?	Online Change Laboratory designs need to balance synchronous and asynchronous activities, promoting convenient and low-risk interactions, using varied media, carefully planned to suit the participants and their intent.

10. Discussion and next steps

To progress the online Change Laboratory methodology, we need to recognise a number of compounding challenges facing online Change Laboratorians, and discuss the challenges and opportunities of online Change Laboratories. More generally, educational research in online settings faces persistent difficulties surrounding agency, participant voice, technical issues, and the balance of authenticity with reliability (Savin-Baden & Tombs, 2017). Online Change Laboratories seek to expose and aggravate problems in social practice, which is clearly consequential for these persistent difficulties. The diversity of our own research settings illustrates the



futility of making claims about educational research which are divorced from context. Yet our response yields some general observations about our shared challenges and opportunities:

- *Challenges* for online Change Laboratories are associated with perceptions of lowered interpersonal interactions, with participants and researcher-interventionists making comparisons between online settings and onsite settings and often deeming the latter as better for provoking and sustaining intersubjectivity. Difficulties with social interactions are frequently cited in the literature on educational research, and in broader social science research, with online methods often cited as stifling spontaneity, limiting rapport, and favouring text-based and solitary tasks. For the Change Laboratory methodology, social interactions and trusting relationships—which ought to be legitimised as socially antagonistic and troublesome—are critical for expansive engagement with task stimuli and mirror data. Additionally, the designed interactions, and the online resources being called upon by participants, ought to reflect to some extent those in the problematic activity being examined. These are particular technical and methodological challenges, demanding deliberate attention to task designs in an online setting, with consideration of how participants “deal with the same object in their daily work ... despite differences in their occupation, task or hierarchy.” (Virkkunen & Newnham 2013, p. 65).
- *Opportunities* for the online setting are related to furthering the benefits of online interactions, experienced as convenience, remoteness, and lowered risk. For some participants, an online setting enables and eases their participation, which can be arranged around other commitments in their work, learning, and personal lives; to be more comfortable with political confrontations, due to physical separation; to avoid groupthink, and the pretence of consensus; and to use the time and distance to deliberate and ponder, to consider the implications of their proposals prior to making contributions. The need to establish familiarity with the hosting platforms, and provided media, can come to be perceived as a means for participants to take control, through which “responsibility becomes increasingly shared among the participants” (Virkkunen & Newnham 2013, p. 107). Equitable access to task stimuli and mirror material can promote examination and dialectical thinking. And lastly, for researcher-interventionists, the online setting can compel us to take an approach to task stimuli and resources which foregrounded leanness, accessibility, and ease with which to aggravate contradictions, in addition to presenting different options for our data curation and analyses.

In closing, as online Change Laboratorians—and as Activity Theorists—we are acutely aware that spontaneous examples of expansivity are uncommon, which we feel might justify an online Change Laboratory as an intentional research-intervention to engage people in *dialectical thinking* (Langemeyer & Roth, 2006). In online Change Laboratories we arrange for participants to collaboratively engage in understanding, critiquing and redesigning their activity through *double-stimulation*, a Vygotskian method and principle which inspires our task designs (Sannino, 2015). These online double-stimulation task designs require our consideration of conflictual aspects of change, through which we promote our participants becoming involved in a process of *expansive learning*, leading to a “radically wider horizon of possibilities” (Engeström, 2001, p. 137). Expansive change engenders their *transformative agency*, their ability to “break away from the given frame of action and take the initiative to transform it” (Virkkunen, 2006, p. 49).

These principles, concepts, methods, and notions warrant additional consideration in online Change Laboratory settings. By furthering discussion of online Change Laboratories, the methodology itself can be further developed and extended, an aspiration which we hope this current work has contributed toward. There appear to be significant and lucrative further



research opportunities in online settings for the Change Laboratory methodology, in ways which are sensitive to participants' concerns and commitments, which call to the strengths of online interactions while mitigating the challenges, and which leverage the opportunities for the growing community of researchers conducting online Change Laboratories. Come and join us!

11. How this work was produced

The steps below set out distinct phases describing how we responded to the question: *Why do an online Change Laboratory?*

- Firstly, in a collaborative online writing workshop, we responded to task stimuli which were set by the corresponding author, each of her given stimulus being analogous to the “Questions” shown as section headings below. An intense period of fifteen minutes of writing, as individuals, was followed by forty minutes of our collation and discussion to formulate a group response.
- Secondly, we uploaded our assembled response to the ChatGPT online large language model (OpenAI, 2023). ChatGPT was used to condense and abridge our group response. A prompt was written, to direct retention of the original voice as much as practicable, whilst correcting grammatical, spelling and stylistic errors, and publishing our response in a relatively formal tone.
- Thirdly, we posted our amended draft for the group's comments and editing proposals, using a collaborative, free, web-based word processor, Google Docs. Each of us provided comments, editing remarks, and supplementary contents, which were then compiled by the corresponding author, and redistributed for the group's sanction. The resulting work is this contribution.

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Maria Spante is a senior lecturer at the Division of Informatics, University West, Sweden where she conducts research in social sciences and informatics. Guided by curiosity regarding human interaction and communication in various technical systems, she has participated in a range of projects to study how humans have strived to accomplish things together when interacting with or via technical systems, solving specific tasks, creating specific products and new possibilities for learning.

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Jane Nodder's research interests focus on using Activity Theory and the Change Laboratory to promote expansive learning and transformative agency in online academic communities. Her interest in the Change Laboratory as a practical, participatory, interventionist approach, was sparked when she used the methodology online to examine the potential to co-create approaches to teaching and learning for courses in her institution. Jane is now using Activity Theory and the Change Laboratory to explore the professional development needs of online educators from a range of UK HEIs throughout their careers.



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