



Technical Report

An indicative structure for planning and coordinating workshops across a Change Laboratory research-intervention

Philip Moffitt

Professional Engineering Wing, Royal School of Military Engineering, Chatham, United Kingdom;
phil@philipmoffitt.com

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Bligh

Abstract: This technical report sets out a series of tools which I hope will be useful in structuring, planning, and coordinating expansive workshops across a Change Laboratory research-intervention. By definition, a Change Laboratory research-intervention ought to empower participants to expansively identify, expose, and aggravate contradictions in their social activity of work and learning: we therefore plan, all the while hoping that we will engender expansivity to the point where our plans will be rejected. A structure for our research-intervention's workshops deserves careful organisation yet inherent flexibility, allowing us to prepare for participants' progressively expansive work, to organise and coordinate double stimulation tasks, to predict and trace the engendering of their transformative agency. The structure described below has provided such a handrail and segue, for both participants and for myself as a researcher-interventionist: assisting in the preparation and mediation of double stimulation tasks; provoking and tracing agentive and expansive social interactions; and providing arrangements for data curation, reflection, and reflexivity.

Keywords: Outline plan; Project design; Workshop design.



1. Introduction

My first encounter with designing a comprehensive research-intervention using a Change Laboratory methodology was—perhaps unsurprisingly—in the empirical contributions to my PhD thesis: an eighteen-month formative intervention, intended to redesign technology enhanced learning activity with military engineers (Moffitt, 2019). I was supervised by Dr Brett Bligh, a seminal activity theorist with the Centre for Technology Enhanced Learning at Lancaster University in the UK. Like all genuinely inspirational supervisors and mentors, he encouraged me during my preparations to critique, to examine, to pull at various methodological threads, to help me to understand how and why—in comparison with cognate methodologies—the Change Laboratory uses a relatively prescriptive structure, *concurrently* empowering participants to reject our plans as researcher-interventionists (see e.g. Bligh & Flood, 2015).

Our structured preparation is vital, and yet there are no assumptions that participants will follow our intent—quite the opposite. In these research-interventions, participants are invited to collaboratively and qualitatively transform their own activity, in ways aligned with activity theory's dialectical materialism. There are apparent paradoxes in using a relatively prescriptive structure for an intervention, which itself exists to encourage agentive and expansive work and learning. To explain, the tasks and arrangements are carefully designed and prepared, yet there are no expectations from researcher-interventionists that there will be unquestioned implementation of our plans: “Participant-initiated deviations from the plan constitute an essential part of the expansive learning in the Change Laboratory ... only successfully possible when [the researcher-interventionist] has a clear view of how the pre-planned schedule can be changed” (Virkkunen & Newnham, 2013, p. 79).

It is important to note that such deviations, from plans such as those which are exemplified below, are encouraged from the outset; interventions following the Change Laboratory methodology are not controlled by edict. The methodology is notable for parity of oscillations between “aspects of top-down and bottom-up thinking” (Bligh & Flood, 2015, p. 157), empowering multiple and troublesome influences by all who are represented in these workshops. In fact, neglecting this important multi-voicedness of participants is likely to curtail the provocation of agency, hampering their proposals for disturbance-inducing innovations. As the workshops unfold across the research-intervention, the locus of control ought to shift from researcher-interventionists: participants are expected to “take over the process at some point and generate deviations from the interventionist's intentions” (Engeström et al., 2014, p. 123).

My hope for this technical report is that researcher-interventionists might find the examples below useful, as a handrail or segue, *not* as a recipe for success, but as examples to modify and adapt to particular settings, contexts, participants, and problematic social conditions. By adapting these examples, researcher-interventionists might find value in them as *aides-mémoire*, reminding us of the importance of some structured yet adaptable methodological structure before, during, between, and after workshops.

2. Creating the resource

To me, a structure of workshops is instrumental, at the outset and throughout a Change Laboratory research-intervention. Generating a structure promotes thinking about the design and conduct of workshops in ways which are of epistemological and methodological importance to both the *processes* and the *outcomes* of planning, preparing, and coordinating: we provide ourselves and our participants with intentions, task stimuli, mirror data, and signposts. We communicate intent for unfolding sessions, through which we seek to empower participants to be



able to contribute agentively and expansively, including ways to legitimise socially antagonistic interactions, and indeed the dismissal of our own intent. In planning and preparing, we recognise and mitigate our potential pain points, expose our own theoretical blind spots, and we focus on how we might provoke engagement with task stimuli whilst concurrently empowering participants to agentively and expansively *reject* our plans, to take control of the direction and conduct for themselves. We thus design something which we hope ultimately to not need—at least not in its *initial entirety*.

In curating a schedule for a research-intervention and the detailed plans for each workshop, we come to understand the partiality of our design, the pan-intervention implications, and the potential iterations and sub-iterations of expansive cycles that we hope to catalyse through task stimuli and mirror data in workshops. Compiling this structure reminds us that, from ideation to publication of our research, we must reject notions such as consensus, completion, and closure. We need to make arrangements to iteratively adapt our plans, mediating and remediating, persistently observing and reflecting on the efficacy of task stimuli, all the while anticipating that participants will discard our intentions in favour of their own possibilities for the structure and flow of these workshops. We do all of this both ad-hoc and more deliberately: reactively, e.g. during workshops; and proactively, e.g. before, between, and after workshops.

In previous projects I have structured the ‘flow’ between and during each of these workshops based on their expansive intent, for which extensive reference has been made during design to Engeström (2016). This leads to preparing the participants’ mirror data and task stimuli, to provoke their transformative agency by double stimulation (Sannino, 2015), including empowering them to take control of curating task stimuli themselves. These preparatory steps have enabled practical decisions to be made early, which have impacted on the participants, on the social organisation of workshops, and on the preparation of resources and locations. Focusing on expansivity and the potential for transformative agency has led to modified arrangements for social groupings, holding workshops for sub-groups for expansive work (typically questioning, and later implementing) which might deserve problematisation in sub-groups in a setting of relative safety, prior to a whole-group plenary with its politically charged interactions.

Figure 1 illustrates typical pan-intervention arrangements, including arrangements to accommodate sub-group workshops for questioning and implementing, with likely (though not assumed) dominant expressions of transformative agency shown in the box along the lower section. Figure 2 illustrates the headings which are typically used as a focus for compiling a pan-intervention summary, which feed the plans for specific workshops. These top-row headings in Figure 2 are indicative of the ‘mental order’ in which my own methodological preparations have been typically approached (left to right) for each of these workshops, although in planning, conducting, and reflexively analysing there are more iterations than implied here. Each of the research-intervention’s workshops (represented by subsequent rows which would be added to Figure 2) will have a separate sheet, with detailed arrangements, as shown in Figure 3. This is an extension of an original in Appendix 1 of Virkkunen and Newnham (2013). My own preparations have traditionally used spreadsheet functionality to cross-reference between the summary sheet and the specific workshop details, to minimise effort and error, as exemplified in the files which are provided below.

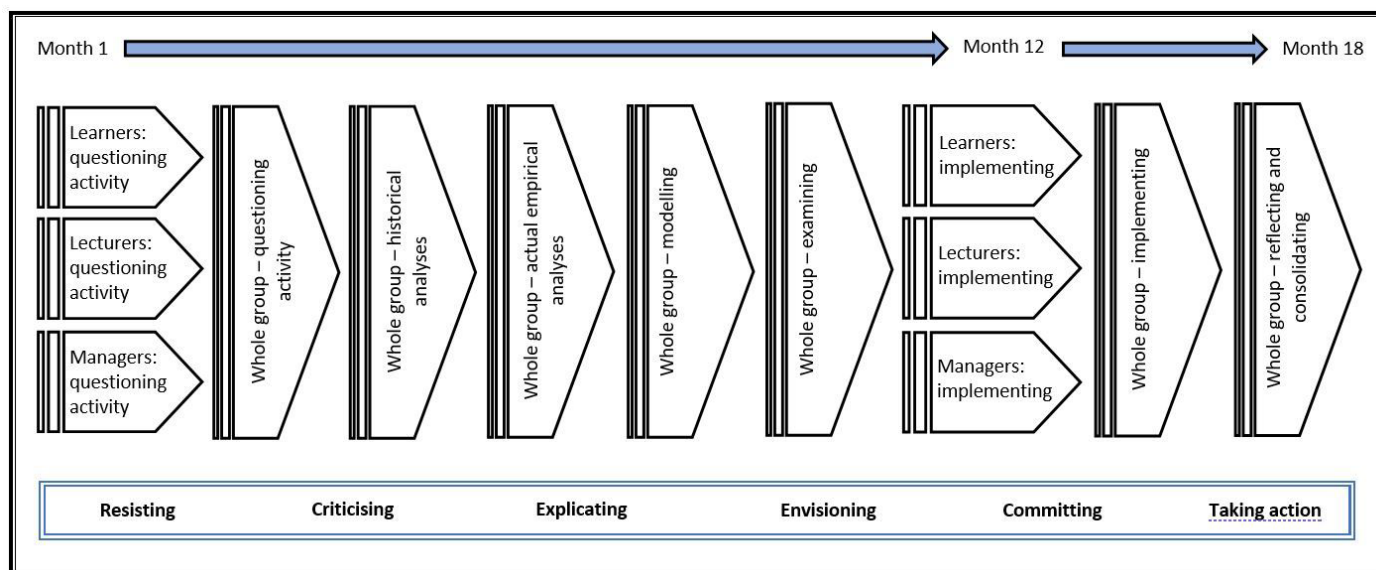


Figure 1. Typical scope of workshops in a Change Laboratory research-intervention, related to expansive actions and expressions of transformative agency.

Session	Date	Expansive learning intent	Preparation notes	Issues from last session	First stimuli	Second stimuli	Mirror data	Participant data	Transformative agency	Social organisation
Session number	DD-MMM-YY	Add expansive action focusing the workshop at the design stage.	Preparatory arrangements for criticising or rejecting aspects of established practice.	Issues, threads, springboards, etc to carry forward between sessions.	Question or problem statement to initiate double stimulation.	Media, models, and frameworks that participants will be invited to use, adapt, curate, and share.	Evidence of problematic situations, disturbances, and innovative solutions, which exhibit the activity being examined.	Task stimuli which participants have created individually, outside of the session, which will be subsequently re-presented.	The potential expressions of transformative agency, for comparison with those which are subsequently realised.	Notes on social organisation, rooms, breakout spaces, groups and sub-groups.

Figure 2. Extract of summary sheet for sessions in a Change Laboratory research-intervention.



ENTER PROJECT TITLE						
Session number: <input type="text" value="Session number"/>		Date: <input type="text" value="DD-MMM-YY"/>	Social org: <input type="text" value="Notes on social organisation"/>		Intent: <input type="text" value="Add expansive action focusing the workshop."/>	
Preparation:					AV data: <input type="text" value="URL for mirror data and task stimuli"/>	
Preparatory arrangements for criticising or rejecting aspects of established practice.						
Brought forward from last session:						
Issues, threads, springboards, etc to carry forward between sessions.						
Time:	Min:	Themes:	First stimulus:	Mirror data:	Second stimulus:	Participant data:
Planned times	Planned minute counts	Predicted themes which the researcher-interventionist has planned for examination during the session, allocated to times and minute counts.	Question or problem statement to initiate double stimulation.	Evidence of problematic situations, disturbances, and innovative solutions, which exhibit the activity being examined.	Media, models, and frameworks that participants will be invited to use, adapt, curate, and share as they engage in double stimulation.	Task stimuli which participants have created individually, outside of the session, which will be subsequently re-presented.
Participants' points raised for next CL session:						
<input type="text" value="Add notes for anything to carry forward"/>						
Action and information for researcher-interventionist:						
<input type="text" value="Add 'notes to self' arising during the session"/>						

Figure 3. Typical plan used in preparing a specific workshop in a research-intervention.

Scheduling and preparations have a distinct *lingua-franca*, with a schemata of visual artefacts shared by activity theorists and a growing community of researcher-interventionists using the Change Laboratory methodology. *First stimuli* are questions based on problematic situations in activity, initially provided by the interventionist and negotiated by participants, including through analyses of *mirror data*: irrefutable evidence of problematic work and learning, described by Bligh and Flood (2015, p. 156) as “provoking visceral reactions within sessions and conveying that problems exist *undeniably*” (*italics in original*). Participants negotiate, imbuing given task stimuli with qualitative meaning, and form their own tools to think with called *second stimuli*. As the sessions proceed, participation becomes increasingly expansive and double stimulation tasks empower that expansivity. There are two persistent tertiary artefacts used in workshops: the expansive cycle and the activity system (Virkkunen & Ahonen, 2011, p. 236). In combination these principles can initially seem esoteric and dense. For an induction to the methodological coordination of expansive learning, transformative agency, and double stimulation, I strongly recommend the work of Virkkunen and Newnham (2013).

In workshops, participants require means to facilitate their collaborative generation, critique, and testing of these expansive ideas and acts. They present, record, analyse, and re-present data in workshops, using “surfaces”, which warrant brief description since they are referred to in the example files. Figure 4 shows the prototypical layout of surfaces for the Change Laboratory methodology, intended for physical rather than digital spaces. This representation is adapted from an original by Cole and Engeström (2007, p. 484), indicating the “space and instruments for supporting an interplay between emotional involvement and theoretical-genetic reflection” (Virkkunen & Ahonen, 2011, p. 237). The configuration and management of surfaces



(whether online or physically co-present) will influence our structure and intended unfolding of workshops. The dimension in the vertical plane, from past to present to future, shows how surfaces can be used to analyse change through time. The horizontal dimension from the mirror to the ideas / tools and to the models / visions shows the degree of abstraction or generalisation:

- The “mirror” denotes concrete mirror data, usually primary artefacts;
- The “ideas / tools” are used for intermediate generalisations and secondary artefacts;
- And the “models / visions” are typically tertiary artefacts such as the expansive cycles and modelled contradictions on labelled activity systems.

The provided data, task stimuli, artefacts, and intended acts are generally included in planning and preparing the overall structure, with further details in the specific workshop plans.

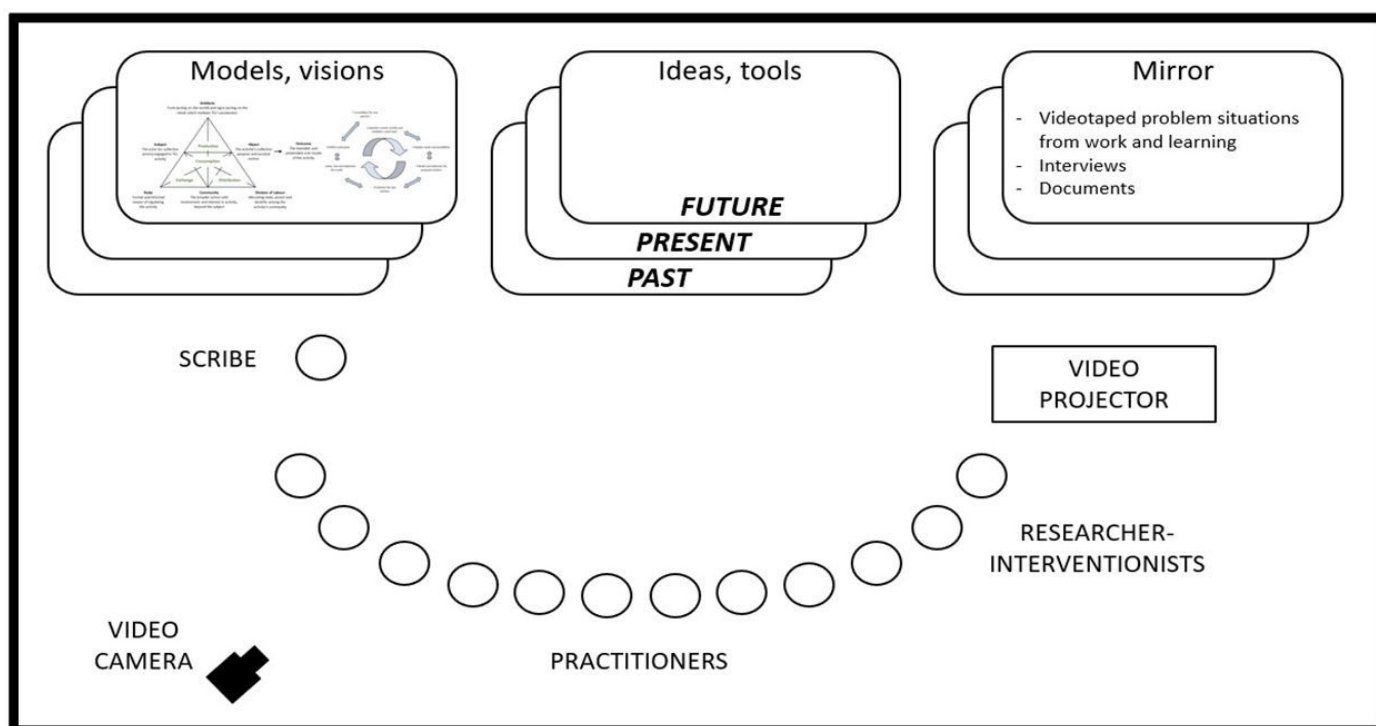


Figure 4. Prototypical surfaces which inform the structure of a Change Laboratory research-intervention, adapted from an original by Cole and Engeström (2007, p. 484).

3. Examples of the resource in use

The example structure has assisted my design of both physically co-present and online research-interventions (see e.g. Moffitt & Bligh, 2021b; Moffitt, 2022). In either mode, as workshops have unfolded, the surfaces provide for group work which is captured as still images and as a faithful record of interactions on AV media (expansive work in workshops can be re-presented for discussion in subsequent sessions, which although rare can be incredibly powerful). Using a series of digital resources, typically related and accessed on spreadsheets, a structure can be curated and modified as expansive work proceeds. We can maintain an archive of our aspired (yet not assumed) unfolding of expansive acts, potential requirements for task stimuli and mirror data, making preparations and investments of time and effort *before* workshops, which allow us to react to the needs of participants *during* workshops. In Figure 5, the structure of a research-intervention is being referred to in the coordination of physically co-present



workshops. As the researcher-interventionist in this project, I accessed the summary and the details for specific workshops using a laptop, connected to the surfaces and linked to an archive of prior workshops. That device is shown circled in the inset image of Figure 5. It allowed me to access, present, and coordinate stimuli and mirror data to sustain participant engagement: examples are shown in the main image (from left-to-right a modelled activity system, a four-field analysis, and video footage of failing activity).

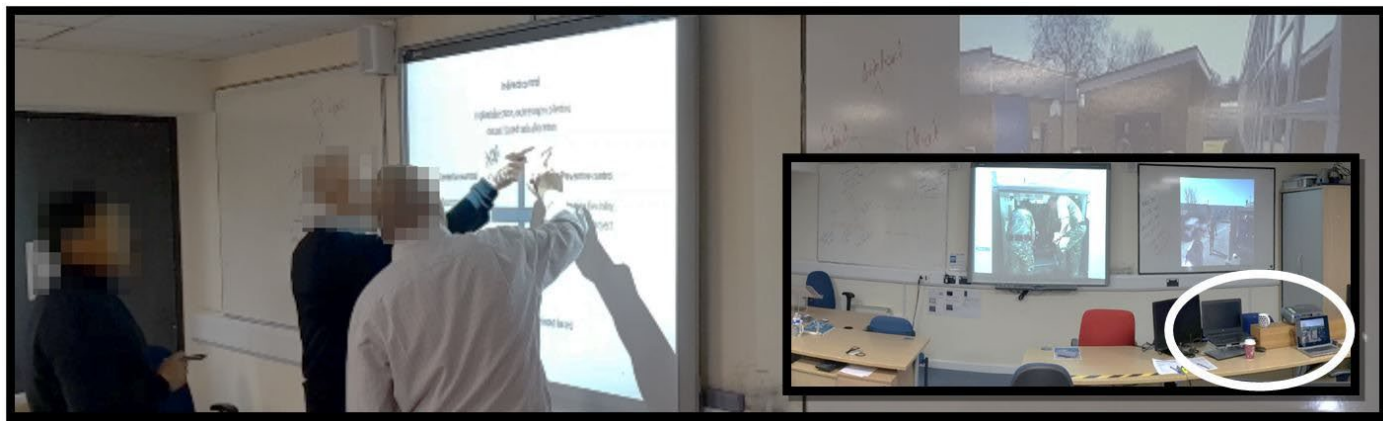


Figure 5. Using the structure during a research-intervention with physically co-present arrangements.

Figure 6 shows comparative arrangements for an online Change Laboratory research-intervention, one which is summarised in Moffitt and Bligh (2021a). Communicative interactions here take place on Zoom, shown on the centre panel. The left hand panel of Figure 6 shows participants engaging with task stimuli using a shared whiteboard, accessed online using the platform Limnu. Tasks are coordinated by a researcher-interventionist, referring to the structure on the right hand panel. Access to task stimuli and mirror data can be accelerated by the use of hyperlinks on the structure to the right, the use of URL mapping and bookmarking, and backlinks to shared resources. During these interactions, participants will typically ‘see’ the centre and left hand panels, yet will not routinely access the right hand panel of Figure 6, which builds in the summary and detailed workshop sheets to form a ‘dashboard’ used by the researcher-interventionist.

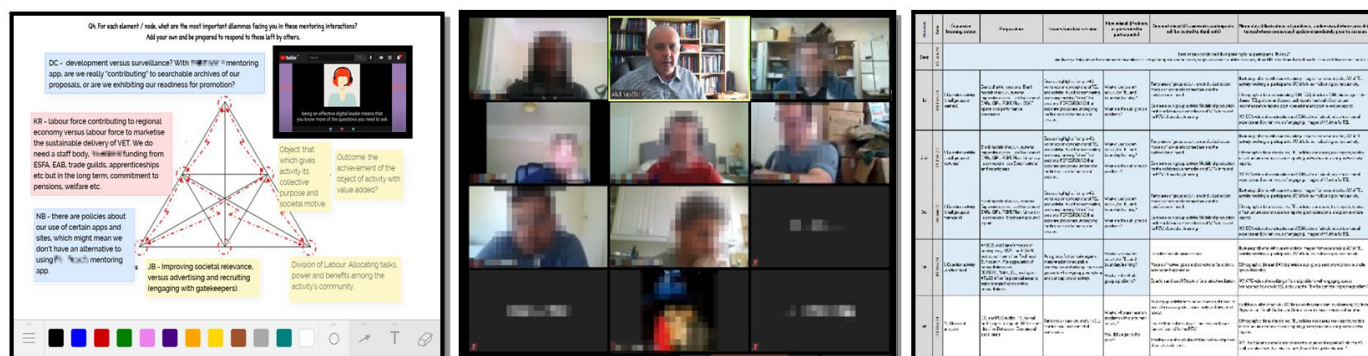


Figure 6. Using the structure during a research-intervention with online arrangements.



4. Reflections on the resource

The examples of structure provided below have been used to facilitate the design of expansive activities for groups of up to twenty participants, typically meeting weekly or fortnightly, to undertake fairly structured two-hour workshops, and follow up workshops some months later, with an expansive cycle typically taking eighteen months: more than the prototypical four to six months (Engeström, 2007, p. 372). The resources warrant adaptation to suit particular settings and social circumstances, local needs of participants, and the guidance of researcher-interventionists. The examples highlight how multiple epistemic levels are brought into play by us as researcher-interventionists, to suit the interactions of participants who work and learn in diverse relational ways, despite sharing their stimuli and mirror data in the same setting and at the same time. This structure might provide a handrail or segue, yet plans will need adapting to the needs of specific participants, organisational practice, and problematic activity.

It is our responsibility as researcher-interventionists to attend to the provocation of expansivity, to prepare a constellation of artefacts, whose “material form and shape have only limited power to determine epistemic use” (Engeström 2007, 35). Reflection and reflexivity reminds us of the partiality—yet necessity—of planning and preparation. The Change Laboratory methodology encourages our participants to use these visual tools and signs to mediate their expansive acts, in very diverse, distinctive, and relational ways. Like all artefacts, these structures, plans, stimuli, and mirror data do not have a will of their own: they mediate. Our structure warrants consideration of a constellation of artefacts and of the social and cultural mediators of our research-intervention, which can itself be considered as an activity whose purpose is to change another activity (Bligh & Flood, 2015). The value of the processes and outcomes of structuring workshops, to me, are in epistemic ‘expectation management’, illustrating and mitigating potential problems with our intervention’s artefacts, rules, community, and division of labour.

The structure for these expansive workshops, like the Change Laboratory methodology itself, is cyclical and iterative (Engeström, 2013). Our structure ought to be capable of accommodating how our research-interventions differ from pre-ordained change. There are three crucial differences which are epistemically important, yet which can be problematic for operationalisation, and which without such a structure would be incredibly difficult to prepare for:

- Inception: rather than the researcher directing, the activity’s problematic and contradictory object is identified and analysed by participants, who establish the inception and direction of change.
- Process. Somewhat counter-intuitively, a relatively detailed design is generated for the intervention’s process, yet we encourage that design to be rejected and adapted by participants themselves.
- Outcome: researchers do not control variables, or implement standard replicable solutions; rather, transformative agency is engendered through expansive engagement with task stimuli.

5. Examples for download and adaptation

These downloadable and adaptable resources comprise four files, intended to assist researcher-interventionists with developing a summary of sessions, and authoring a plan for each of those sessions, in designing a Change Laboratory research-intervention. The ‘populated’ examples are pseudonymised, with ‘re-presented’ and ‘re-mediated’ exhibits from prior sessions,



meaning that tertiary artefacts such as activity systems and expansive cycles are labelled with contextual and setting-specific data.

The applied examples include selected expansive acts (questioning and examination) being conducted in separate sub-groups, prior to being subsequently examined as a whole-group plenary, hence the number of sessions is extended somewhat, as is the total time at around eighteen months. In the XLSX files, a pan-intervention summary sheet is cross-referenced to subsequent sheets which detail arrangements for each workshop. The summary sheet from the applied example is also hyperlinked to media used within sessions, including task stimuli and mirror data for that particular research-intervention. These are locally meaningful, and may seem obtuse to those outside the problematic activity being examined: a blend of methodological tertiary artefacts, task stimuli, and representations of local practice, all of which have typically proven to be useful in the reality of such workshops. They are not examples of distinction, and will need adaptation to other settings: the consideration of the problematic circumstances being examined; the context and intent of each workshop; and the participants' characteristics.

My aspiration is that colleague researcher-interventionists, using these summary sheets and session plans for each workshop, might be assisted to encourage cyclical movement through the expansive learning actions described by Engeström (2016), preparing and curating mirror data and task stimuli in advance, thereby formulating arrangements to provoke transformative agency by double stimulation (Sannino, 2015). The resources have proven useful between and after workshops, as a source of data for tracing expansive outcomes and manifestations of transformative agency. The resources comprise:

- Supplement 1: A template for planning the overall intent and individual sessions of a Change Laboratory, presented as an XLSX spreadsheet. Cells which are cross-referenced are colour coded.
- Supplement 2: An applied example of the overall summary and individual workshops during a Change Laboratory research-intervention, presented as an edited version of the XLSX spreadsheet above. The hyperlinked media in the right hand column are intended to represent workable examples of task stimuli and mirror data.
- Supplement 3: A summary sheet of the overall intent from the applied example above, presented as a flat PDF on A3. Whilst of limited functionality, it is a more widely readable (near universal) format.
- Supplement 4: Planning considerations for each individual session of the same applied example above, presented as a flat PDF on A4. This is also non-editable, yet in a widely readable format.

About the author

Philip Moffitt is a consultant and teaching-focused lecturer based at the higher education wing of the Royal School of Military Engineering in the United Kingdom. A chartered engineer, facilities manager and ergonomist, he specialises in technology enhanced learning for teams who design, build and operate critical national infrastructure, whose learning requirements are often only identified at the time and location of need. Phil's research interests include: collaborative learning for geographically distal teams; relationships of learning with





culturally and historically embedded organisational practices; ergonomics for human-computer interaction and error reduction; and research-interventions to redesign learning driven by participants themselves. Phil is an Alumni Member of the Centre for Technology Enhanced Learning at Lancaster University.

Email: phil@philipmoffitt.com

Twitter: [@PhilMoffitt](https://twitter.com/PhilMoffitt)

ORCID: [0000-0001-9469-8216](https://orcid.org/0000-0001-9469-8216)

LinkedIn: <https://www.linkedin.com/in/philip-moffitt-394a9087/>

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