Technical Report

Creating participant workbooks for double-stimulation tasks

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Abstract: This technical report sets out an example of a participant workbook, considering how a particular workbook was created and used in online workshop tasks. The idea is that, as researcher-interventionists, we can design and distribute provisions for participants in workbooks, through which they can maintain their own archive of ideas, reflections, and expansive progress. The workbook provides graphical and textual stimuli for double-stimulation tasks; annotations and illustrations arising from encounters with mirror data; and observations of their own daily reality and related disturbances. The design aims to support participants to record, archive, and retrieve their thoughts and acts in agentive ways concomitant with the Change Laboratory approach. The resources described have proven useful in online Change Laboratory projects, whose contexts are briefly described.

Keywords: Knowledge management; Technological tools.

1. Introduction

This technical report sets out an example of a participant workbook, along with considerations for its creation, intended for adaptation and use as a resource for double-stimulation tasks during the design and orchestration of a Change Laboratory research-intervention. These examples build upon earlier work of researcher-interventionists including the "lab books" of

Bligh & Flood (2015, p. 165), the "work diaries" of Ellis et al. (2013, p. 270), and the "disturbance diaries" of Virkkunen and Newnham (2013, p. 247). The layout and content of workbooks needs to correspond with the intended (i.e. the designed, yet not assumed) unfolding of a research-intervention's workshops, with corresponding task stimuli providing segues between expansive acts: within the same workshop, between workshops, and across the entire research-intervention (see e.g. Moffitt, 2019; Moffitt & Bligh, 2021a).

Workbooks include representations of activity in varying degrees of abstraction or generalisation, often re-presenting earlier representations for development, as we encourage participants to progressively permeate their given task stimuli with qualitative meaning. Workbooks include arrangements for participants to access and adapt these task stimuli, which in various uses can be described as primary, secondary, and tertiary artefacts (Wartofsky, 1979, p. 201):

- Primary artefacts are used directly in production, including tools and modes of social organisation. Examples are each workshop's concrete "mirror data", audio-visual evidence of failing activity, which is hyperlinked in workbooks to digital archives where participants can access mirror data as they reflect, and record thoughts.

- Secondary artefacts are representations of primary artefacts, including the ensuing actions and their conventions of use. Examples in use are the "ideas / tools", intermediate generalisations during individual and group work, presented as documented disturbances and proposals, and recorded in workbooks as the workshops unfold.

- Tertiary artefacts are the more abstract and imaginary representations, such as conceptual models and illustrations which are not immediately practical. Persistent examples are the "models / visions" of expansive cycles and modelled activity systems (Virkkunen & Ahonen, 2011, p. 236) with personal versions maintained in workbooks.

As researcher-interventionists we provide data, task stimuli, artefacts, and intended acts, which we generally include in planning and preparing the overall structure, with further details in specific workshop plans. Workbooks ought to sensitively relate the daily reality of participants' organisational practice to these more 'esoteric' activity theoretical principles (esoteric in the sense that they inevitably demand introduction and explanation to participants, rather than simply 'issuing' them as task stimuli). We cannot assume that merely providing workbooks will allow participants to engage in double-stimulation, or to be capable of relating task stimuli to the problematic social conditions which drove their research-intervention.

The aspiration for the resources included below is that the notes, and accompanying downloadable files, might be useful to participants and to researcher-interventionists. In either digital or analogue form, they can be adapted allowing participants to use these workbooks to faithfully record, archive, and retrieve their individual and collective thoughts and acts, both inside and outside an intervention's workshops, to help trace their progress in expansive work and learning. In addition to recording progress through double-stimulation tasks, the same resource can allow researcher-interventionists to communicate common arrangements to participants:

- Administrative arrangements, such as timings for workshops "to take place sufficiently frequently that momentum is maintained for undertaking tasks or generating new evidence" (Bligh & Flood, 2015, p. 156);

- Technical arrangements for double-stimulation, such as task stimuli and access to mirror data, managing expectations for work which is *increasingly contingent on the earlier sessions and increasingly under the initiative of the participants themselves*" (ibid., p. 157, italics in original);

- More general arrangements, such as spaces for participants to record notes, illustrations, reflections, and to "refer to definitions and tasks and make notes while other participants are speaking" (ibid., p. 165).

2. Creating the resource

The workbook resources below are highly visual, and were created to contribute to the means by which participants share and modify ideas, tracing progress through double-stimulation tasks. The workbooks were created to be progressively abstract: they begin with relatively concrete, familiar, textual and visual content steeped in the daily reality of problematic activity and organisational practice; they become progressively abstract, gradually accustoming workbook owners to activity theoretical principles. My aspiration has been to encourage participants in recording visualisations, textual reflections, and proposals for subsequent collaborations, "supported by visualizing and documenting the collective thinking that takes place in the discussions in the Change Laboratory sessions" (Virkkunen & Newnham, 2013, p. 10).

In designing the format, layout, and content of these participant workbooks, there was a persistent balance to be struck, between the *epistemic* quality of stimuli and the *publishing* quality of stimuli. Over-processed, highly refined workbooks might have inferred that these resources were intended for reference, with concomitant deterrence of expansive interactions, rather than for personal concretisation. Dense typography and filled space were felt likely to imply complete and authoritative content—dissuading embellishment by participants. I was therefore concerned with providing ample blank space, simply formatted task stimuli, and unambiguous expectations of participants, in ways which felt more likely to invite engagement, promoting qualitatively meaningful and agentive adaptation of given stimuli, and provoking a sense of ownership.

On commencement of my own research-interventions (two of which are summarised in Moffitt, 2019; Moffitt & Bligh, 2021a), at the point when workbooks have been issued and task stimuli discussed, arrangements have also been made for occasional *re-issue*: many images, links to mirror data, and task stimuli have been centrally edited as these interventions proceeded, with published adaptations informed by ongoing workshop-based tasks and workbook-based tasks. Examples which have been previously observed, which can be traced in some of the content of the files below, include:

- Re-issue when activity systems were progressively adapted by participants. For example, activity systems which were speculatively proposed in 'modelling' were edited as they were taken forward for examination, testing, and implementing. Having added speculative contradictions and other elements, inside and outside workshops, models of activity systems were amended and re-introduced in workbooks for subsequent tasks.

- Re-issue when disturbance diaries for different sub-groups revealed socially antagonistic content indicative of contradictions. For example, during consolidation, a sub-group's allocation of blame for failure to sustain change became data to provoke lucrative problematic interactions, with other sub-groups whose opinions differed. These diverse reactions to task stimuli were recorded in amended workbooks, which were re-issued to provide a common record and to provoke further discursive work.

- Re-issue when participants themselves had rejected my plans, yet had requested my ongoing technical and logistical assistance. Their new proposals for mirror data and task stimuli necessitated textual communication with colleagues, to share web links to evidence of

failing activity. My amendment and re-issue of workbooks, with updated hyperlinks, allowed participants to focus their efforts on expansive work.

The format and content of workbooks has thus demanded differentiation, to suit the context and drivers of each research-intervention. The downloadable examples and discussions below include artefacts and mirror data specific to the problematic activity being examined, in addition to models which will be more familiar to activity theorists, and double-stimulation tasks which will be recognisable for those using the Change Laboratory methodology. The projects in which these resources have been previously used (e.g. Moffitt, 2019; Moffitt & Bligh, 2021a) were comprehensive (lasting many months, with significant implications to many people) and intensive (demanding significant time and effort, as individuals and as groups, away from primary employment duties).

The workbooks exemplified below have been previously made available to participants in various formats: hard copy for printing, flattened portable document format (PDF) for non-interactive use (with a stylus and touch screen), and interactive PDF for multiple devices, each to suit the participants' preferences. Also of note, preferred formats have differed for the same participant when outside workshops (used as a tool for preparatory thinking and reflection) and inside workshops (used as a tool for diarising, for referral to definitions, and for recording expansive progress). Some content has had pan-intervention relevance, e.g., definitions and intended outcomes of the Change Laboratory methodology. Some content has been persistently and routinely revisited and amended, as expansive work and as learning has unfolded, e.g., recording disturbances, modelling and remodelling activity systems and contradictions, predicting and tracing the iterations of expansive cycles, and disturbance-driven ideation.

The example resources were intended for use at an individual level, for participants to make private records, although in two specific projects (summarised in Moffitt, 2019; Moffitt & Bligh, 2021a) participant workbooks were also 'collected in' at negotiated intervals, used as sources of data for my own analyses, including on cessation of all scheduled workshops. Such arrangements were made clear to participants at the outset—particularly regarding privacy and relational ethics—typically in a workshop termed 'Session Zero', in which workbooks were distributed, and administrative and logistical arrangements were discussed. These early discussions helped participants to address non-expansive concerns, and to see the content of their workbooks as their own task stimuli, changing their relationships with the context of their problems (Virkkunen & Schaupp, 2011, p. 634).

3. Examples of the resource in use

In the examples in the files below, participant workbooks were used to record individual work and group work. Individual work was undertaken as preparation prior to workshops, for recording ideas and observations during workshops, and for individual reflection after workshops: participants reported that these tasks were almost always undertaken privately, yet were openly discussed and compared during subsequent workshops. Additionally, workbooks were used for group work during workshops, generally as a means to record an individual copy of group work, and reflections of collaborative tasks taking place on surfaces.

Figure 1 shows a small group discussing a preparatory task, intended to prepare them for a subsequent plenary workshop. Workbooks are visible on the bench, with technical documents and calculations pertaining to their problematic activity (learning tasks related to the water distribution systems in the background). In the figure, one of the three participants is maintaining an interactive PDF workbook on a tablet device (visible on the bench, with the red cover

stand), and two participants are maintaining their workbooks on hard printed copies (visible white paper in clipboards, with pens and pencils).


Figure 1. Participants of a research-intervention collaboratively discussing a sub-group task in their workbooks, which are shown on the bench.

Typically, participants have claimed to have spent ten to thirty minutes preparing their workbooks for each workshop. The same time has been allocated to reflecting. Preparation and reflection are usually undertaken concurrent with unrelated and non-expansive activities—reflecting during physical training, conversing with colleagues during routine work breaks, annotating and illustrating while waiting for programmed learning to start, and while using public transport. An example workbook exercise from a hard copy PDF is at Figure 2, with the participant's handwritten notes clarified in text boxes. It shows preparatory task stimuli for a subsequent workshop, to collaboratively problematise activity through historical analysis. Figure 3 illustrates an extract from an interactive PDF workbook, with task stimuli to model activity's secondary contradictions. In my involvement with research-interventions to date, roughly half of all participants have curated their workbooks electronically, using an interactive PDF, whilst roughly half have completed them on paper, printing their own hard copy. A very small minority have used touch screens to electronically annotate a flattened (i.e. non-interactive) PDF, recording digitally with a stylus yet not interactively.
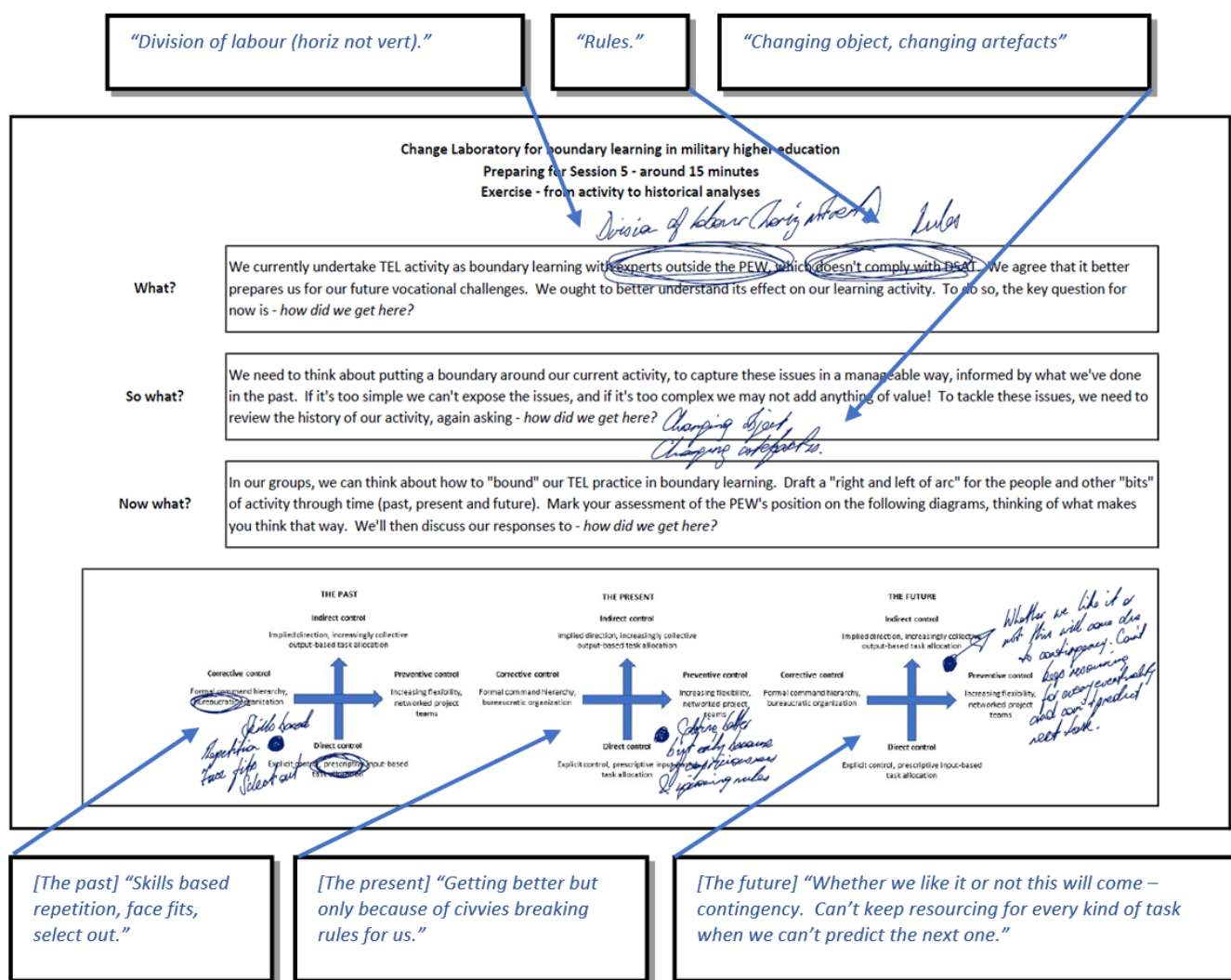
Figure 2. Extract from a participant workbook (a hard copy flat PDF), with task stimuli preparing for a subsequent workshop to problematise activity, and clarification of handwritten notes in text boxes.
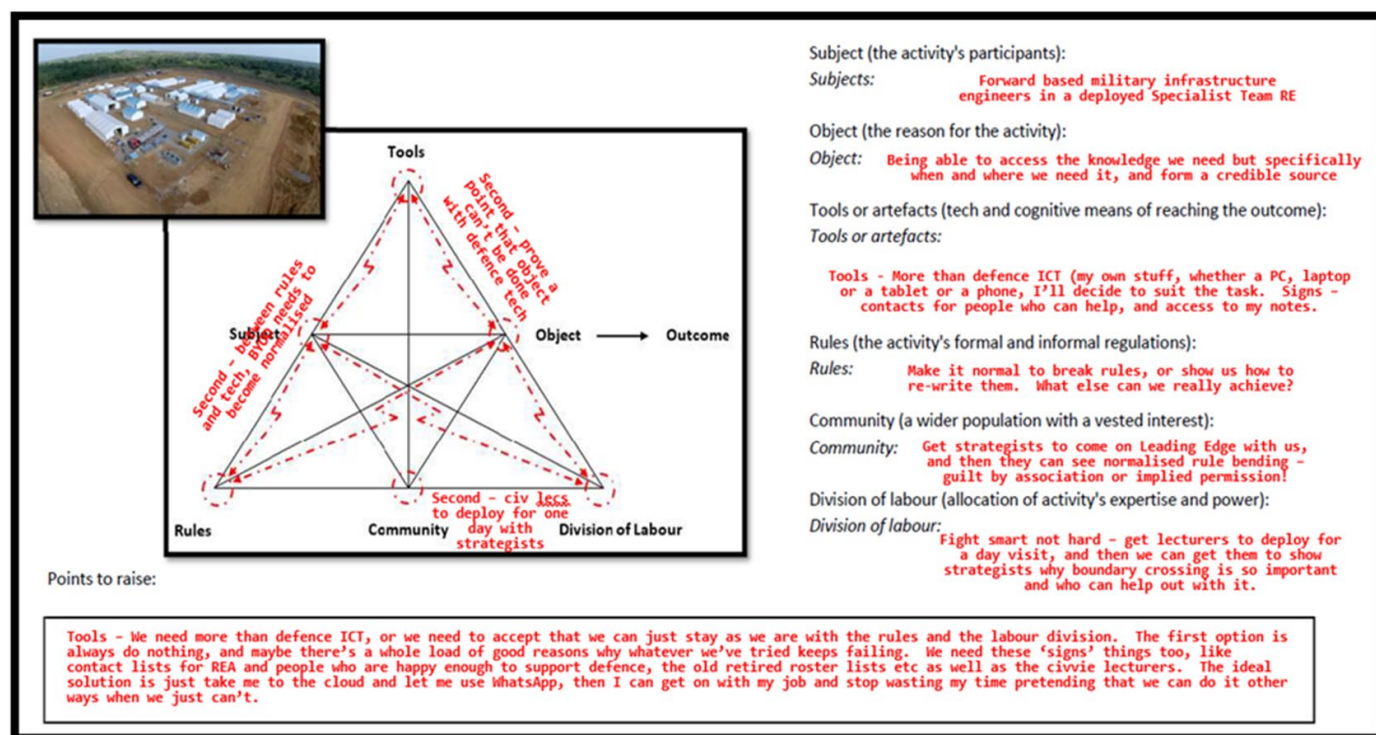
Figure 3. Extract from a participant workbook (an interactive PDF), with task stimuli preparing for a subsequent workshop modelling secondary contradictions.

There are multiple means by which responses to workbook stimuli have been 'imported' into workshops for further collaborative expansive work with a group, where individual work has been influential on collaborative work:

- Some workbook tasks have been specifically coordinated with collaborative tasks in subsequent workshops. For example, individual opinions of particularly problematic aspects of activity, in tasks undertaken prior to workshops, have been subsequently 'assembled' within workshops;

- Other tasks have been based on reflective and reflexive activities, which yielded multiple, contrasting, individual outcomes. For example, double-stimulation tasks in workbooks have provoked individual reflections on the allocation of blame, and responsibility for failure, with opposing opinions presented within workshops as mirror data, for negotiation and debate;

- And participants have proactively extrapolated and transcribed task stimuli, importing data from tasks in workbooks onto surfaces within workshops. For example, the persistent models of the expansive cycle and the activity system used in workshops have been updated by individuals on commencement of each workshop, referring to workbooks as they have done so.

It is important to remember that as an intervention proceeds, engagement with workbooks ought to become increasingly expansive, and double-stimulation tasks empower that expansivity: the intent is that participants will agentively and expansively reject given stimuli, including workbooks, in favour of their own alternatives. And yet, as researcher-interventionists, we may have to continue providing the necessary logistical and technical support to maintain workbooks (and to gather in workbooks for their ensuing data, to use in our own analyses if appropriate).

One example of agentive rejection relates to the illustrated task stimuli in Figure 4, which shows a shared collaborative whiteboard hosted on the web-based platform Limnu. Here, task stimuli are initially developed individually then resurrected in workshops for collaborative enquiry: in this way, the platform is used as a hybrid, of individual workbook-based tasks and collaborative surface-based tasks. This format has been used in online Change Laboratory research-interventions (including the one summarised in Moffitt & Bligh, 2021b), with relative success, participants reporting enjoyment and qualitative meaning at being able to contribute to task stimuli, jointly yet asynchronously. In other research-interventions in other settings, however, participants have flatly rejected the notion of being able to post and view comments and stimuli, concerned for their inability to immediately clarify and challenge: to these later groups, the private functions of workbooks, and the collaborative functions of surfaces, were deemed irresolvable—and definitely functions which ought to be discrete. To different participant groups, each with different objects of activity, the same mediating artefact was embraced by one and rejected by the other, both calling upon the same rationale and functionality to justify two different decisions. The important point is that both groups took ownership of the functions of workbooks.
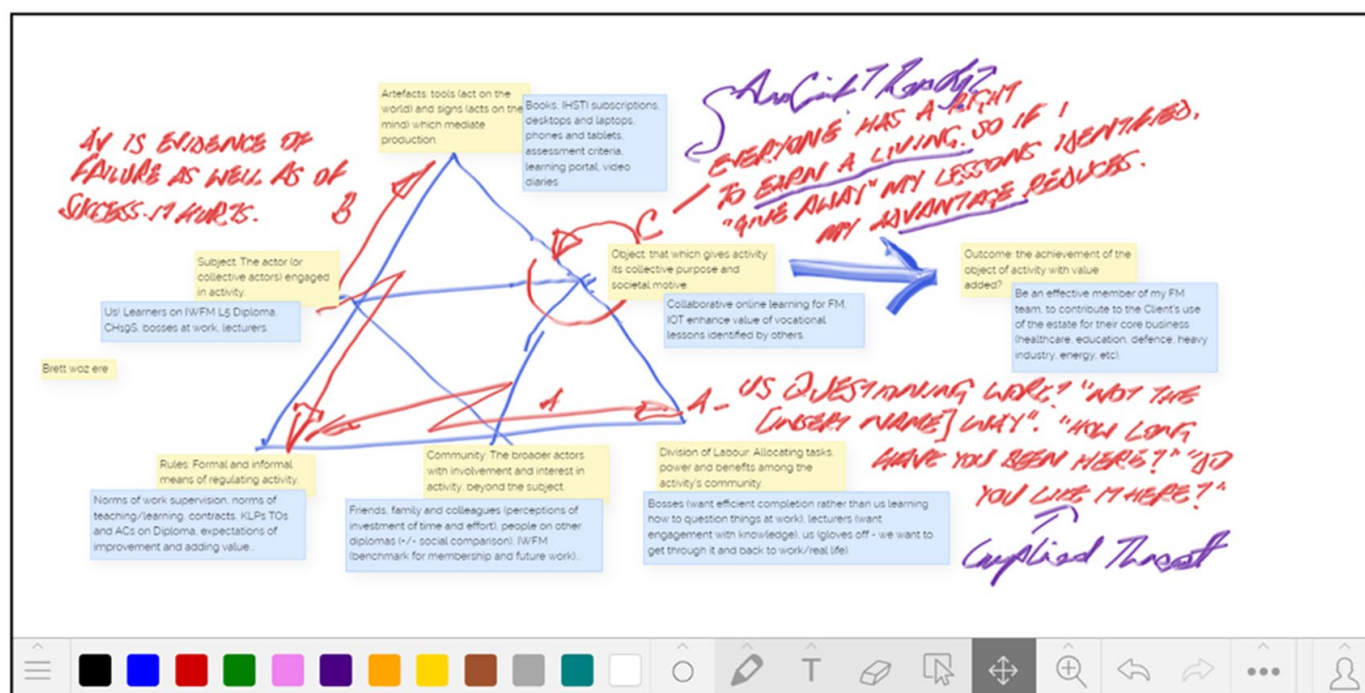

Figure 4. A shared collaborative whiteboard hosted on the online platform Limnu, functioning as a hybrid of workbook-based tasks and surface-based tasks.

Another modest yet qualitatively meaningful instantiation of rejection is shown in Figure 5 (from Moffitt, 2019): here, learners diverged from my intent, deciding to display—and respond to—their lecturers' and managers' disturbance diaries, presenting their own responses back to these other sub-groups for debate. These acts of making social comparisons and displaying sub-group responses became a negotiated expectation, across the whole group, to be completed by all participants on commencement of subsequent workshops. These 'new' initiatives, created by participants themselves, became known as 'live disturbance diaries', after the disturbance diaries described by Virkkunen and Newnham (2013). These acts illustrate how workbooks provided a means for participants to confidently and agentively reject my plans, to

confront those in positions of authority, raising politically problematic observations, legitimising and normalising socially antagonistic interactions.
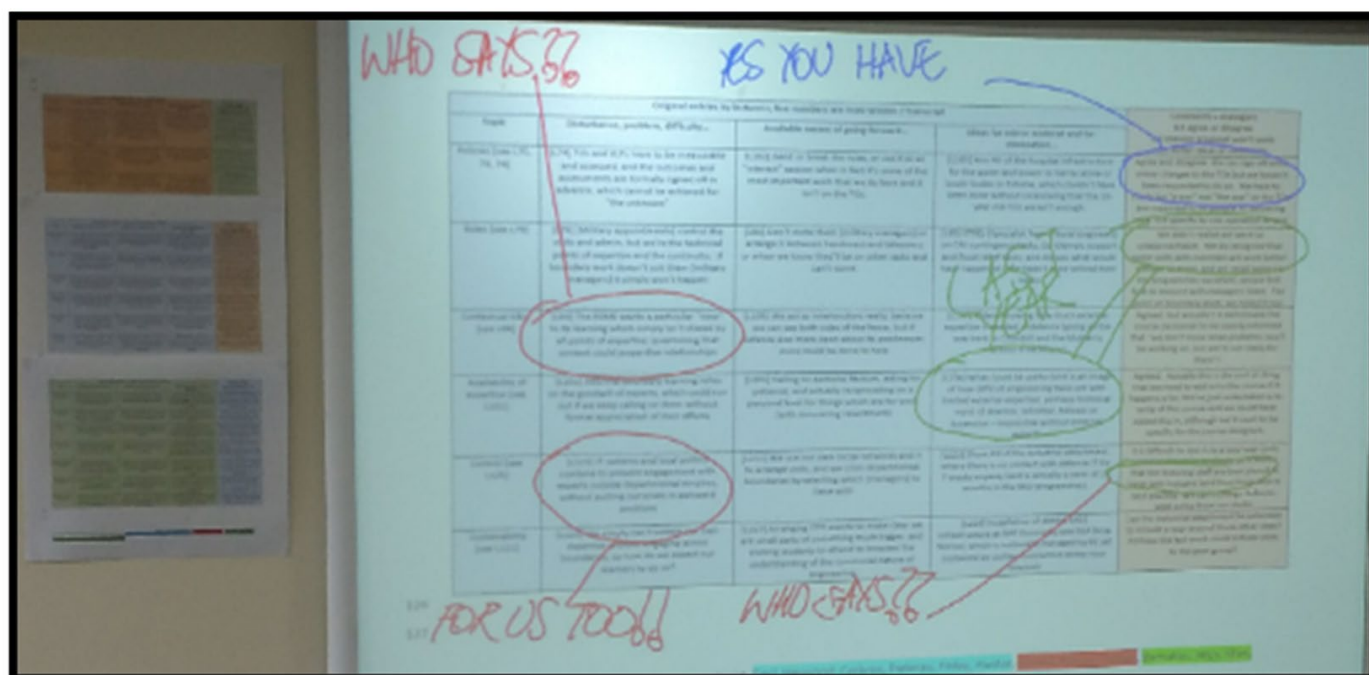
Figure 5. Extracts from workbook disturbance diaries being updated for social comparison and group responses during workshops.

4. Reflections on the resource

A significant challenge when creating and curating a workbook is resisting the urge to cram every available area of every page with task stimuli, every principle of expansivity, transformative agency, and double-stimulation. Instead, task stimuli must progress with gradual abstraction, with cultural and historical sensitivity, commencing with textual and graphical representations of problems and organisational practice, in ways which are known and familiar. Workbook resources seem to work best when they provide a gentle and gradual segue, from these familiar representations to the more esoteric activity theoretical representations. This is a similar challenge to resisting the urge to model future activity too early, at the point in an intervention when little is known about the historical evolution and the cultural embeddedness of problematic activity (Engeström, 2016). The workbook needs to empower participants to confidently use cues, such as modelled expansive cycles, historical and future visions of activity, images and documents "couched in terms of CHAT which they can then use to analyse the contradictions, tensions and dilemmas that exist" (Daniels et al., 2007, p. 131).

A further challenge is to place these workbooks—and the content which they present—amongst a broader constellation of artefacts. Artefacts including workbooks and task stimuli *mediate*; they do not have volition or will of their own, nor do they exist in a vacuum. There are important implications for interpretation and engagement with task stimuli, recognised in Moffitt and Bligh (2021b), where "participants directed their attention more towards artefacts and rules, and the tensions between them, than to the object of activity. We came to believe that the design of the task workbooks perhaps encouraged this focus on broader, systemic issues." (p. 132). Participants will engage with task stimuli and mirror data in their own diverse ways,

despite sharing the same stimuli and mirror data, often in the same format. It is the responsibility of us, as researcher-interventionists, to attend to the provocation of expansivity, including yet not solely through a constellation of artefacts whose "material form and shape have only limited power to determine epistemic use" (Engeström 2007, p. 35).

In my modest experience with the Change Laboratory methodology, my participants and I have always benefitted from issuing and discussing workbooks, their contents, and double-stimulation during a 'Session Zero', a non-expansive first workshop where administrative, technical, and logistical arrangements are described. Preferences for formats and expectations for completion can be discussed, along with ethical concerns. The latter discussions need to make clear whether they are to be collected for data analyses, or are instead to remain private. Relationships between individual workbook tasks and collaborative surface tasks also demand negotiation, as do frank exchanges about the nature of expansivity in the reality of double-stimulation tasks, the agentive rejection of researcher-interventionist intent, and the legitimisation of criticism and social antagonism. Workbooks can thus be positioned in a changeable, dynamic, swarming constellation of artefacts, which ultimately we empower participants to agentively and expansively take control of.

5. Examples for download and adaptation

These downloadable and adaptable resources comprise four files, intended to assist researcher-interventionists with developing a participant workbook during the design of a Change Laboratory research-intervention. The 'populated' examples are pseudonymised, with 're-presented' and 're-mediated' exhibits from prior workshops, meaning that tertiary artefacts such as activity systems and expansive cycles are increasingly labelled with contextual and setting-specific data. They are not intended to illustrate task designs of particular merit, and they demand adaptation to settings, the problematic circumstances being examined, the context of each workshop, and the participants' characteristics.

Many images and task stimuli are particular to the problem being examined, and will require amendment of wholesale replacement. As the research-intervention proceeds, task stimuli will require supplementation, adapting to expansive outcomes of workshop-based tasks and workbook-based tasks, such as increasingly concretised activity systems and iterations of expansive cycles. My aspiration is that colleague researcher-interventionists, using and adapting these examples in double-stimulation tasks, might be able to assist their participants' cyclical movement through the expansive learning actions described by Engeström (2016). Using these workbooks, participants might be encouraged to undertake tasks including reflective diarising, recording of disturbances, and engagement with second stimuli for subsequent examination with colleagues. The resources comprise:

- Supplement 1: An example workbook, with additional notes intended to assist researcher-interventionists who are new to the methodology. This resource is presented as an XLSX spreadsheet. Notes for researcher-interventionists are placed on a small separate pane, to the right of the intended page layout for participants. The current print area is set to print both the researcher-interventionist pane and the area for participants to access task stimuli, mirror data, and other information. The task stimuli are relatively neutral, yet often specific to the problem being examined, adapted from prior workbook-based tasks and workshop-based tasks.

- Supplement 2: The same example workbook as above, with the same notes intended to assist researcher-interventionists new to the methodology. This resource is presented as a

flattened (i.e. non-interactive) PDF, intended for printing landscape on A4, or to be read from a screen of 13" or larger.

- Supplement 3: An interactive workbook at pre-publishing stage, presented as an SDF software file. This was created on Scribus 1.5.8, which is free software for the creation and editing of rudimentary interactive PDF documents. Scribus is an open source alternative to Adobe InDesign, the latter being the industry standard for publishing interactive PDFs.
- Supplement 4: A 'live' interactive workbook, which was used by participants in a recent Change Laboratory research-intervention, presented as an interactive PDF. This has been pseudonymised, yet as a live example the majority of task stimuli are specific to the problem being examined, and are mature representations, often adapted from prior workbook-based tasks and workshop-based tasks.

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