Leadership Development Evaluation (LDE): Reflections on a Collaboratory Approach

Abstract

Purpose

This paper reports on the experience of attempting a 'collaboratory' approach in sharing knowledge about leadership development evaluation (LDE). A collaboratory intertwines 'collaboration' and 'laboratory' to create innovation networks for all sorts of social and technological problems.

Approach

The authors, alongside a variety of public and private sector organisations, created the collaboratory. Within the process, we collected various forms of qualitative data (including interviews, observations, letter writing and postcards).

Findings

Our findings show key areas of resonance, namely *the ability for participants to network, a creation of a dynamic shift in thinking and practice* and *the effective blending of theory and practice*. Importantly, there are some critiques of the collaboratory approach discussed, including complications around: *a lack of 'laboratory'* (hence bringing into question the idea of collaboratory itself), and the need to *further develop the facilitation of such events*.

Originality

Our originality is to ultimately question whether the network actually achieved the collaboratory in reality. We conclude, however, that there were some distinct benefits within our collaborations, especially around issues associated with LDE, and we provide recommendations for academics and practitioners in terms of trying similar initiatives.

Keywords

Leadership Development Evaluation (LDE), Collaboratory, Tensions, Culture and Context.

Introduction

In this paper, we explore and assess the usefulness of taking a collaboratory approach to sharing knowledge and experience in evaluating a leadership development (LD) programme. The basis for doing so was an attempt to ensure that LD programmes are purposeful and dynamic (Howieson and Grant, 2020; Kempster *et al.*, 2018), innovative and creative (Megheirkouni and Megheirouni, 2020), linked to organisational effectiveness (Douglas *et al.*, 2022) and aligned with broader organisational challenges (Hernez-Broome and Hughes, 2004). More specifically, our contribution is to the leadership development evaluation (LDE) literature by implementing and reporting back on the perceived effectiveness of a collaboratory approach – a 'suggested' innovative and creative approach to research (Bos *et al.*, 2007; Finholt, 2003; Muff, 2014; Wulf, 1993). In addition, we also contribute by critiquing the notion of collaboratory through its attempted practical engagement. Thus, both the results and analysis of the process are central to the discussion presented. This offers distinct insights seldom covered within the literature concerning LDE. Our findings suggest that while there were issues in maintaining an ongoing collaboratory, this should not sway researchers and practitioners from using this sort of social lab (Hassan, 2014) in sharing knowledge, good practice and experience of LDE.

The paper is structured as follows. We highlight the literature on collaboratory techniques and make links to LDE. Key literature within LDE is then drawn out that is particularly pertinent in light of testing out a collaboratory approach. We follow this with a presentation of our methodology, analysis and findings. Finally, we draw together a critique of the approaches applied, leading to relevant conclusions and recommendations for LDE practice.

The concept of collaboratory

Organisations are becoming increasingly reliant on teamwork and collaboration (see San Martín-Rodríguez *et al.*, 2004, for a review). Within this paper we explore one way of organising collaboration with experimentation in mind – the 'collaboratory'. Wulf (1993, p.854) describes a collaboratory as a '*center without walls, in which the nation's researchers can perform their research without regard to geographical location - interacting with colleagues, accessing instrumentation, sharing data and computational resource, and accessing information in digital libraries*'. 'Collaboratories', therefore, represent a paradigm shift in problem solving (Wulf, 1993) and learning (Nix *et al.*, 2018) where more holistic views and less isolative problem solving (Brabham, 2008; Steiner and Posch, 2005) is enacted. Effort in a collaboratory is specifically designed to enable a diverse range of stakeholders to address a burning societal issue, such as terrorism, financial crisis, energy, leadership and management education etc. In our case, we were interested in exploring the notion of sharing ideas around the issues commonly associated with the evaluation of LD programmes.

We wanted to engage with this idea and bring it into the domain of LDE because the notion of collaboratory aims to benefit from the 'wisdom of crowds' (Surowiecki, 2004), with the solution to a complex problem(s) dependent on a large body of solvers/stakeholders. Collaboratories aim to aggregate solutions, not average them among participants (Brabham, 2008) and is represented by a typically iterative and continuous process done in a skilfully facilitated circular space, through a combination of action research and action learning (Muff, 2014). Hence, a question raised initially by our research was, to what extent does 'collaboratory' differ to already existing ideas of action-learning (e.g. Volz-Peacock *et al.*, 2016) or action research (e.g. Clark *et al.*, 2020)? And to what extent might this form of research/learning help with sharing practices in and understanding complexities of LDE? These became our initial guiding research questions.

Unlike the other collaborative efforts, the literature suggests that the inclusive nature of collaboratories ensures that barriers to innovation are overcome and this leads to the generation of socially robust solutions (Steiner and Posch, 2005; Gehlert *et al.*, 2010), as distributed intelligence is collectively harnessed, resulting in the mobilization of skills (Terranova, 2004). Indeed, this is echoed by Brabham (2008) who noted the ability of such a group to excel at a common objective that would be highly problematic for traditional problem-solving teams. In our case, the problem to be solved encompassed creating effective evaluations of a range of LD activities which took place within a variety of organisations that took part. We were also keen to develop critical approaches to the evaluation of complex interventions (e.g. tackling wicked problems across boundaries; mobilising collective capacity and culture change) – rather than a simple assessment of individual learning.

In contrast to the benefits above in using a collaboratory technique (Muff, 2016), there are issues regarding the measurement of impact within collaboratories. For example, and using one aspect of a collaboratory in particular, Lee and Bozeman (2005) and Melin and Persson (1996) noted that the significance of 'research collaborations' are typically measured by outputs such as co-authorships, institutional co-authorships and sub-authorships. This, however, might not be the case in more socially inclined environments, such as an exploration into LDE good practice. According to Bos and colleagues' (2007) typology, our collaboratory would be classed as an 'Open Community Contribution System' where the focus is the aggregation of knowledge by many separate individuals and groups toward a common problem. For us, the development of the collaboratory was more about building a community of practice (e.g. Wenger, 2000), comprising leadership academics, practitioners, developers and those who commission evaluation rather than measuring outputs *per se*. Hence, the importance of our research reported herein.

The Leadership Development Evaluation Collaboratory (LDEC)

The LDEC was developed by the authors with funding and support from two local NHS Leadership Academies. A steering group was formed with members present from the universities involved and the sponsors. The collaboratory meetings took place once a quarter at the host universities on an alternate basis between 2016 and 2018 with between 20 and 30 attendees at each event, mainly from a public sector background but also some participation from the private and third sectors. Generally, each collaboratory took the form of:

- plenary speakers on theoretical and research considerations linked to LDE and issues of evaluation more broadly
- the presentation of case studies on LD (largely from the NHS, but some insights from other public and private sector initiatives)
- discussion groups (between 8 and 10 members) to share any learning from these presentations that may further develop practice in evaluation
- workshops on techniques for LDE, such as simulations and diagnostics
- Action Learning Sets of between 4-5 members were also created and met once or twice (either in-person or virtually) between each collaboratory.

We will now turn towards some particular LDE issues we wished to investigate within the parameters of the collaboratory.

Key Concerns in LDE

Practitioners in LDECs are currently operating in complex environments, such as the NHS, where evaluating LD programmes is challenging (Watkins *et al*., 2011). As a consequence, we wanted to explore the idea of collaboratory. In developing the collaboratory, we were aware of some key issues we wished to reflect upon during the experience; we have therefore, highlighted these below.

Tensions and contradictions in LDE

When setting up the collaboratory, we were acutely aware of the tensions and politics involved between commissioners, managers, leaders and evaluators and the level of complexity involved in any evaluation process (Jarvis *et al.*, 2013; Kennedy *et al*., 2013; Turnbull and Edwards, 2005). In highlighting this inherent complexity, Day *et al*. (2014) suggest that when discussing LD and its evaluation we need to focus on the development of both human and social capital. Consequently, one of the challenges of evaluating LD is that there is the necessity to look at the contributions beyond numbers and the traditional qualitative material to better understand the dynamics of a process. Burns (2009) reports that quantitative methods provide a useful role in LDE; however, a wider perspective is required in order to better observe 'how' and 'why' it is happening. In taking this view we empathise with Anderson's (2010) assertion that an aspect of management development, such as leadership development, is a complex relational and dialogical activity. And, as Kennedy and colleagues (2013) highlight, LD and hence its subsequent evaluation is set within differing mindsets. We therefore felt that a collaboratory approach would help to capture this complexity and start the journey into the 'how' and 'why' of development programmes.

Another point highlighted by Carden and Callahan (2007) is the level to which LD programmes create leaders or loyalists, where LD is a mechanism for acculturating managers (see Tomlinson *et al.*, 2013). Conversely, Larsson and colleagues (2019) have found that LD programmes have the potential to distance individuals from their organisations. Others have also found resistance (e.g. Carroll and Nicholson, 2014) and dominant power relations that manifest a performative masculinised construct (see Stead, 2014; Mate *et al.*, 2019) in LD programmes. These are, therefore, important as mechanisms of LDE maybe measuring the alignment of those on a programme as opposed to the level of learning, or may not pick up on

resistance or distancing that occurs from the programme. Evaluative processes may also penalise programmes that have distancing or resistance evident, without appreciating the level of leadership learning. Again, the use of a collaboratory approach could have an important discursive (see Anderson, 2010) impact on how aspects of programmes are judged. King and Nesbit (2015) add to this perspective by suggesting that in some instances, the use of traditional techniques for evaluation can lead to a collusion between supplier and purchasers of LD. Their findings also raise a question around causation. Our view was that a collaboratory space would provide challenge and support for evaluative processes and also work toward a better interpretation of causation and transference back into organisations (see Belling *et al*., 2004).

Turnbull and Edwards (2005), for example, report that tensions might derive from the cultural norms within an association/collaboration. Such tensions might also be considered a complex reflection of the societal, economic and political asymmetry that occurs between the different members of a specific project or collaboration. Jarvis and colleagues (2013) argue that when it comes to LDE, stakeholders need to work with the uncertainty and anxiety that arises and utilise it in a creative way. Stakeholders need to also be aware of the destructive challenges that might arise from the tension which surrounds LDE programs. As a result, we wanted to use these tensions as the basis for discussion within collaboratory meetings.

Culture, Context and Creativity in LDE

It is clear that when evaluating LD there are increasing debates in recent literature regarding how evaluation techniques keep pace with ever increased levels of creativity in LD programmes (see Edwards *et al.*, 2015 for a review) and how these techniques harness the impact of culture and context on leadership learning (Edwards and Turnbull, 2013).

With regards to creativity, many organisations across a variety of sectors view leadership and its development as a source of competitive advantage (Raelin, 2004). As a result, researchers and practitioners have begun to develop an interest in innovative methods of LD (see Edwards *et al*., 2015, for a review). The development of these creative techniques raise questions of how these methods are then evaluated and whether there is a need for greater creativity in LDE processes. Our focus here is how a collaboratory approach may help in developing more creative approaches to LDE.

Some researchers suggest the need to compare LDE findings across differing sectors (e.g. Packard and Jones, 2015). Others have highlighted the deeper importance of capturing context and culture in LDE (e.g. Edwards and Turnbull, 2013) and the need to gain information on outcomes at not just individual but organisational and community levels (e.g. Black and Earnest, 2009). Edwards and Turnbull (2013), for example, influenced by anthropological approaches to the study of leadership, argue that, if leadership is a dynamic social process (e.g. Wood, 2005), evaluation needs to be able to assess the way learning becomes evident in the culture of organisations and the actions of leaders. They present five case studies that seek to show how using social constructivist approaches to evaluation are a basis for assessing leaders' abilities in different cultural contexts. To evaluate LD requirements deeply in complex environments demands time commitment and a diversity of approaches and these naturally consume more resources than competency-based methods. For example, attempts to evidence individual learning and organisational outcomes by following a cohort of participants in LD (McCray *et al*., 2018) used considerable resources to achieve this objective.

Our paper, therefore, seeks to explore whether a collaboratory approach might harness a deeper sense of culture, context and creativity in LDE and help address potential concerns around long-term impact of LD, as outlined in the next section.

Longitudinal evaluation in LDE

Pursuing longitudinal evaluation represents an important part of LD evaluation to track how leadership emergence develops over time (see Joseph-Richard *et al*., 2021; Packard and Jones, 2015). Joseph-Richard and colleagues (2021), in particular, highlight the issue of time being important when evaluating LDE. They suggest that a time-sensitive approach to evaluation is paramount to being able to longitudinally capture any impact from leadership learning. As Grove and colleagues (2007) also highlight, outcomes from a LD programme may not occur in some contexts for some time and hence there is a need to capture these 'down-stream' results. Yet only a small portion of evaluation programmes have assessed the long-term impact of development interventions (e.g. Kellogg Foundation, 2002).

Using an arrangement like a collaboratory, we hoped, would enable a deeper tracking process to be initiated when looking into the impact of LD initiatives including design and implementation over time. Added to this is the need to appreciate that LD involves an ongoing response to reflections both from informal and formal interactions (Marsick and Watkins, 2001), leaving some scholars to suggest a delayed reflective evaluation technique (King and Nesbit, 2015) and ones linked to a theory of change (Watkins *et al.*, 2011) to try and capture these moments. Our experimentation with the collaboratory approach was intended to draw this elongated perspective out within evaluation projects, at least, in part.

In addition, research has emphasised advantages in longitudinal evaluation (Marvel and Pitts, 2014; Oberfield, 2014; Zhu, 2013). On the one hand, some scholars suggest that longitudinal evaluation should be measured within two time periods (Jacobsen and Andersen, 2014). On the other hand, Singer and Willett (2003) suggest two-wave studies of change are limited and therefore longitudinal evaluation requires at least three repeated measures. Thus, the collaboratory was a potential way to gain multiple evaluation points to expand the value

of longitudinal evaluation in the hope of capturing 'chain-reaction' aspects (see Anderson, 2010) of learning and development that may occur.

Overall then, we were in the hope that the collaboratory would act as a community of practice (akin to Smith *et al.*, 2019) for stakeholders and would engender an ethic of care (e.g. Smith and Kempster, 2019) and a sustainable approach (Russ-Eft, 2014) to LDE. These three areas, reviewed above, form the basis of how the collaboratory will be interpreted through the data gathered, which we describe below.

Methodology

Our project was designed to investigate the contribution of a collaboratory approach in facilitating innovation and new thinking in LDE.

Data collection

In order to gain a deep and wide interpretation on the impact and effects of the collaboratory in both evaluation and research, the researchers considered a variety of data collection techniques (as recommended by Edwards and Turnbull, 2013). The research methodology was therefore partly ethnographic in nature and the following processes for gathering data were employed. The data was collected through observation of the events by the authors, end of event anonymous feedback from participants, telephone interviews with a sample of key stakeholders and participants, and letter writing exchanges between the researchers and volunteer participants.

We also collected data from ten attendees to LDECs from a variety of sectors including, health, education, consultancy, and academia (see Table 1). The table encompasses how many LDECs these participants attended, whether they presented a case study problem, made

a presentation or gave a talk, attended action learning sets, or were involved in the letter writing activities.

Insert Table 1 here

Letter writing and observation

At each collaboratory event, observations were undertaken by two of the three lead researchers in alternating shifts and notes were taken. More general notes were also taken by a research assistant. Additionally, the research team took part in an innovative process of letter writing (Clandinin and Connelly, 2000). According to Kralik and colleagues (2000), there are few studies that have used correspondence as a primary data collection method hence its novelty. This process consisted of one researcher writing a letter to the other two researchers with a pre-arranged order for the next two researchers to respond with their own letters. Between November 2016 and May 2017, the research team completed a number of interactions with this process and collated 17 letters for data purposes. At the January 2017 meeting, six participants were also invited to complete a three-person letter writing exchange process before the April meeting. Details of these participants are presented in Table 2.

Insert Table 2 here

Postcards

At the end of each meeting, participants were also asked to write thoughts, suggestions and/or recommendations on postcards. These were then collected by organisers and collated by the research team. Similar to Polit and Beck (2006), we felt that these types of memos helped to capture participant's first feelings and impressions and gave space for creative writing in data collection (e.g. Charmaz, 2006).

Analysis

This study used thematic analysis in order to identify patterns and themes within the qualitative data (Braun and Clarke, 2006; Yu and Smith, 2021). The analysis was appropriate for this study as it gives an opportunity to understand the potential of an issue more widely and determine the relationship between concepts (Marks and Yardley, 2004). The results were therefore structured according to this analysis. Five key themes were found in the data that seemed important to the exploration of this use of a collaboratory:

1. The importance of networking within LDE
2. Creating dynamic shifts in thinking and practice
3. Blending theory and practice
4. Lacking laboratories
5. Hosting and facilitating

We will now take the opportunity to discuss these categories and sub-categories in greater detail and draw relevance back to the literature reviewed earlier.

Findings and Discussion

The findings have been separated into the five themes highlighted above. These themes reflect the impact the collaboratory experience has had on the various attendees and also represent a general critique on the notion of 'collaboratory' in this particular context.

The importance of networking within LDE

From most of the interviews, and similar to Dyllick and Muff (2014), it can be seen that participants appreciated the opportunity for networking and to learn about LDE tools, cases and approaches. This is supported by Participant I who mentioned learning through networking provides them with opportunities to learn from other peoples' experiences:

"… talking to other people is all that part of networking … you pick up stuff from people about lessons learnt and they're valuable if you have those before you start."

(Participant I)

Participant F also highlighted the importance of networking within collaboratories:

"… for me the impact has come through networking and meeting people, I think that those are networks that hopefully will develop and establish into the future…"

(Participant F)

Postcard responses from the events further support the previous point that participants have found the networking opportunity to be particularly useful. The following sums up views in this regard:

"Great to have a new pool to network and collaborate with." (Postcard response)

Furthermore, the postcard comments also evidence how useful it was for the attendees to have the opportunity to interact between different sectors, particularly across different areas of the public sectors. For example:

"… really interesting to hear across different sectors particularly different bits of the public sectors … feels like a parallel world that I didn't know anything about but there are a lot of things that are similar as well as different." (Participant B)

One participant went on to highlight how the stress and change of environment and work would act as a motivating factor that, when combined with the networking event and the

opportunity to meet people from different sectors, further motivates the participants to enhance their output and boost the planning and evaluating:

"... I think it's really good to get away from the workplace ... having that opportunity to meet different people, to think about things differently ... is really helpful and useful." (Participant I)

The evidence from the findings therefore certainly show the potential for a wider network that promotes a more discursive and relational approach to LDE (Anderson, 2010). It is also apparent from Participant F's statement that a longitudinal potential for LDE may be found with a collaboratory approach with the hope for networks to be developed into the future. Hence, we might suggest here that a collaboratory approach provides the foundation for evaluating LD over time (Joseph-Richard *et al*., 2021). The focus on networking also shows the potential for collaboratories to generate an understanding of the impact of LD in differing contexts (cf. Edwards and Turnbull, 2013) and across differing sectors (cf. Packard and Jones, 2015).

Creating dynamic shifts in thinking and practice

Our findings also suggest a further level of impact beyond just networking whereby the participants are 'reframing' their experience of LDE and developing an understanding of the 'transference of best practice'. Additionally, different participants provided feedback that suggested that their level of open mindedness had been broadened. Consequently, they explored areas outside of their direct field of expertise and their involvement increased to a point where they felt comfortable to lead and talk about evaluation with colleagues and other practitioners:

"I think my involvement has triggered me to lead and talk more about evaluation with colleagues and other practitioners outside of the collaboratories ... and it's also

triggered me when doing some work with somebody else who's also attended the collaboratories …" (Participant C)

From the observational and researcher letter data it would seem that further development of the collaboratory would be to re-engage with the case studies continuously and gain further feedback on how various projects are progressing and how the collaboratory process has helped attendees develop new ideas or move their issue forward. This is an opportunity to work more on the process of the collaboratory. At present, the data suggests that we have achieved the collaboration part of the initiative; it seems we have built a committed network that is developing levels of trust. The next phase, we believe, will be to work on the laboratory part of the initiative, whereby we are actively working on case studies, ideally from their inception. Again, here we see the potential of gaining a deeper level of understanding across cultures and contexts as has been highlighted as important factors in evaluating LD initiatives (cf. Edwards and Turnbull, 2013; Joseph-Richard *et al*., 2021).

Blending theory and practice

During the various sessions, it has been possible to step back and engage with academic content. Furthermore, the inclusion of academics has sparked conversations about the concepts of leadership and change management and how such ideas have changed with time. This has supported critical thinking and analysis of the underpinning assumptions of LD and its evaluation. Within the interview data, there seems to be recognition of the value of engaging with academic content when thinking about evaluation processes:

"… it made me realise that I hadn't really stepped back and rethought on the concept of leadership … how we keep more up to date with leadership theory." (Participant B)

Indeed, attendees reported that the academic content helped them particularly with organisational development:

"… evidence-based models … and change management … I found the academic stance helpful particularly in relation to research and evidence based of work." (Participant J)

The use of models in relation to the research and evidence-based work together with the academic content helped people rethink the concept of leadership itself. Here, whilst there may not be a definite experimentation with differing LDE techniques *per se,* we would argue that gaining a more analytical and critical focus on the conceptualisation of leadership is a helpful starting point for developing such experiments and hence working more towards a laboratory that truly attaches to the collaboration already evident.

Lacking laboratories

As alluded to above, participants reported that there was more focus on the collaboration part than the laboratory, which could benefit from a stronger focus:

"I think we've all often thought the laboratory part is a bit weak." (Participant A)

The evidence from the observational and researcher letters data would suggest that there are two possible reasons for this. Firstly, a lack of feeding back at subsequent collaboratories from case study presenters. It seems therefore that more needs to be done to gain further insights from those presenting their work on an on-going basis. The other reason is a lack of space for experimentation within techniques for evaluating and discussing:

"I wonder, therefore, whether we might work towards a day-long session on some case studies/proposals, and use an open space …" (Letter 4)

This was an area that the steering group were reacting to already and put measures in place to make this a core part of the events that were run later in the collaboratory series. Yet, it would appear that the collaboratories suffered, in part, perhaps due to a lack of collaborators. Furthermore, from our observations we suggest that an additional issue seemed to be around expectations – i.e. people expected to be given practical tools, techniques and

insights rather than speculating on untested approaches. Although being similar in issue to Gehlert *et al.* (2010), within our context, the issue centred around the significant changes in who participated from collaboratory to collaboratory. This meant that the laboratory conditions concerning the maintenance of all participating was difficult to fully achieve - usually due to day-to-day pressures (beyond the collaboratory itself), which prevented attendance.

Hosting and facilitating

The evidence from the observational and researcher letter data would suggest that, whilst the hosting and facilitation has been generally of a high standard, there are one or two developments we can make to how the days are run. The first would be the consistency of the facilitation approach as reported by one of the members who was interviewed:

> *"… so how can we pull our expertise, develop a way of working in a more consistent way to get a better quality."* (Participant E)

However, the same interviewee did suggest that there was something gained from the group discussions:

> *"… having a kind of a case study almost or a real-life problem … how do we go about evaluating this then and you … in the room … could be really valuable … and really good"* (Participant E)

The researcher letter data would suggest that developing the way case studies are presented and then re-presented as an on-going process is needed. Thus, we should aim to develop ways to balance facilitation, hosting and research, and how we structure the group discussions to enable greater provocation. Whilst attendance was free-of-charge, participants still had expectations about the need for practical 'takeaways' and the lack of consistency of attendance suggests a cherry picking of which sessions they attended (which was counter to

the original invite from the organisers, which called for consistent attendance over time). One solution may be to use an action learning set methodology (see Cho and Egan, 2009) more extensively within the collaboratory events, especially as these groups consistently met and seem to have had impact between collaboratory sessions.

Conclusions and implications for research and practice

In summary, the collaboratory allows networking opportunities between specialists of different sectors as well as motivating participants to enhance their planning and evaluation of LD. It is necessary, however, to further develop interactions between those commissioning leadership, community and organisation evaluation and the attendees. This, of course, was our aspiration but was difficult to achieve in practice due to the issues outlined in our findings. Additionally, whilst we saw some benefit from cross-sector engagement within the collaboratory, our view is that for a collaboratory to also achieve a deeper impact it needs to attract a wider mix of participants with engagement from more private and charitable sector organisations. This was an area we felt we lacked impact. This was not for lack of trying, but, as we highlight above, participants had quite different aims and/or expectations from their involvement. This seems to mirror wider issues in promoting and sustaining academic-practitioner engagement (see Bartunek and Rynes, 2014). To gain interactions that relate more to tensions and contradictions, which brings to the fore the deeper complexities involved in LDE (see Jarvis *et al.*, 2013; Kennedy *et al.*, 2013; Turnbull and Edwards, 2005) would need a wider participation than we were able to attract. By this we mean that future collaboratories or similar action-based approaches should include a wider array of commissioners, managers, leaders and evaluators that recognises the level of complexity involved in any evaluation process. Our research also suggests, however, that there are inherent challenges and difficulties in achieving this in reality and hence this part of

establishing a collaboratory approach needs careful consideration, even negotiation and ultimately, commitment.

Also, as previously reported, participants suggested that a more consistent group of attendees would enable the collaboratories to have a stronger connection between thoughts and actions. The evidence from the observational and researcher letter data would suggest that this is an area that participants would like to see further developed as they have benefited already from the mix of people engaged in the collaboratory. As we highlight above though this also wasn't for a lack of trying but it seemed participants didn't tend to prioritise their engagement except where they had some associated motivation (e.g. studying a course, seeking a CPD opportunity, building strategic relationships to win further work, etc.).

Lastly, whilst there was evidence of a co-production of theory and practice within the data, we feel that this lacks a critical depth. For example, we would argue that whilst there is evidence of discussing and transferring ideas around theory of change (Watkins *et al*., 2011) for example, we are not sure as to the level participants went away with differing views on more underlying issues such as resistance (Carroll and Nicholson, 2014), complexity (Larsson *et al.*, 2020), distance (Larsson *et al*., 2019), acculturation (Tomlinson *et al.*, 2013) or the masculine nature of LD (Stead, 2014). All these issues have been researched recently and LDE researchers and practitioners, we argue, would benefit from better awareness of the implications for the design and evaluation of LD programmes. Furthermore, we think that there may also be an underlying issue here about people's resistance and/or reluctance to really engage with the complexities of the issues, as doing so may undermine their perceived level of professional expertise and credibility. We suggest therefore that further research using, and experimenting with, a collaboratory and/or other action learning approaches should investigate how critical notions can be further inculcated into the agenda and the impact of them gauged on practice. We believe, however, that this is challenging, as

mentioned earlier, a critical approach requires deep questioning about the nature of reality and knowledge. This is not a simple case of learning and measuring impact, it should be far more transformative in nature.

Overall, there are several strands to take from this paper, especially in practical terms. We have contributed to the knowledge base concerning collaboratories by offering insights into a series of LDE activities. Empirical evidence around the concept of collaboratory is limited. Indeed, there is plenty for practitioners to take away from our experiences and apply into other similar LDE initiatives as well as engaging with the issues outlined concerning the evaluation part of LDEs in particular. The honest insights explored in terms of successes and limitations provide a genuine platform for others to learn from our rich experiences at a deep level. Whilst the collaboratory approach we originally designed, may not have been fully achieved in practice, we did find some benefit in this type of social lab (Hassan, 2014) and would recommend that LDE continues to share knowledge and experience in this way. Future research is perhaps needed to further develop the use of collaboratories as a means of creating greater evaluation capacity amongst those commissioning and delivering LD. Yet, what the collaboratory has shown is that it has the potential to engage with those complex, longitudinal challenges within LDE activities as previously identified within the literature by its duration and the feeding back of previous cases.

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