Studies in Technology Enhanced Learning

Journal homepage: **stel.pubpub.org**

Article type
Full paper, double-blind peer review.

Publication history
Received: 06 September 2021. Revised: 05 March 2022. Accepted: 10 March 2022. Online: 21 November 2022.

Cover image
Badly Disguised Bligh via flickr.



Special issue Activity theory in technology enhanced learning research | **More at** https://doi.org/10.21428/8c225f6e.cbaae672

Redesigning online mentoring schemes for faculty managers in vocational education and training: The developmental role of primary contradictions

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Keywords
Activity theory; Change Laboratory; mentoring; primary contradiction; TEL; TVET

Citation
Moffitt, P. (in press). Redesigning online mentoring schemes for faculty managers in vocational education and training: The developmental role of primary contradictions. **Studies in Technology Enhanced Learning, 3**(1), 1-21.

https://doi.org/10.21428/8c225f6e.d6321ead

Abstract

This paper summarises a research-intervention in a setting of vocational education and training (VET), where mentoring schemes for faculty managers are changed by participants themselves. Participants comprise mentees, who are faculty managers in VET, and their mentors, who are more experienced colleagues in the same institution. Informed by Marx's conception of dialectical contradictions, with a theoretical framework of Cultural and Historical Activity Theory (CHAT), and using a Change Laboratory methodology, participants envision, negotiate, and enact change to mentoring activity. In this study, technology enhanced learning (TEL) is of interest to participants in two interrelated domains of work and learning: TEL describes their own development, including the mentoring schemes examined in this paper; and TEL describes the pedagogical development of faculty and students in VET, the development of which is their managerial responsibility. By collaboratively exposing and aggravating contradictions in their past, present and future activity, participants recognise local dilemmas as manifestations of contradictions in mentoring. The paper examines how they trace primary contradictions of use versus exchange value: a tension in capitalist economies, between inherent worth and exchange as a commodity. Double stimulation tasks enable these participants to collaboratively expose, model and call upon contradictions to enact change. The changes to mentoring activity are modest yet expansive for mentors and mentees, indicating the developmental

https://doi.org/10.21428/8c225f6e.d6321ead

potential of primary contradictions: countering the pretence of managerial consensus in mentoring relationships; challenging business-focused outcomes of mentoring schemes; and confronting top-down coercion during mentor-mentee interactions.

1. Introduction

This paper contributes an example of interventionist research using activity theory, conducted with faculty managers involved in technology enhanced learning (TEL) for vocational education and training (VET). The TEL-related endeavours of these managers are twofold: TEL describes technology-mediated learning processes for teachers and learners in VET, processes undergoing change and development for which these faculty managers hold responsibility; and TEL describes technology-mediated learning processes for their own development, including through online mentoring schemes which focus the current paper. In early 2021, a research-intervention was conducted to change online mentoring schemes, in ways determined by faculty managers and their mentors. The paper focuses specifically on how, for these participants, "change in human practice must be driven by objective contradictions" (Junior et al., 2014, p. 556). In changing mentoring activity, participants called upon their expansive negotiations of *primary contradictions*; tensions of capitalist economics between direct use and value when exchanged in a transaction, whose investigation is crucial to development with activity theory (Foot & Groleau, 2011). Mentees and mentors jointly exposed and aggravated primary contradictions to change their mentoring. Enabled by Marx's conception of dialectical contradictions, they influenced problematic social conditions by first "understanding the social, political, economic and historical bases of material reality" (Sawchuk et al., 2006, p. 5).

In policy and practice for the VET sector, the activities of faculty managers are increasingly portrayed as critical for coordinating the institutional resourcing and standardisation of teaching and learning, and for aligning local contributions to organisational activities (Kezar, 2014). Yet managers are challenged by expectations—in practising their own TEL and in managing TEL for others—that they will tolerate organisational ambiguity, maintain a rhetoric of collegiality, and cascade top-down decisions whilst framing them as pragmatic (see e.g. Steyn, 2001). Particular attention is directed at the allegiance of faculty managers in change programmes for TEL. When change incorporates new technologies into existing social systems, faculty managers are expected to gain the endorsement and 'buy-in' of workforce colleagues and learners (Davies et al., 2017). Mentoring schemes are increasingly employed by school strategists to support managers in undertaking such change programmes, developing their dispositions to overcome resistance and to gain employee accord, whether by genuine negotiated agreement or by the pretence of consensus (Garvey et al., 2018; Guy, 2002). Mentoring schemes generally comprise pairing arrangements, where managers (as mentees) form relatively enduring relationships with more experienced colleagues (as mentors), with career and psychosocial support intended to be of benefit to mentors, mentees and the commissioning organisation itself.

Policy-practice tensions and power inequalities are commonly observed in mentoring schemes, between claims of agentic, process-focused, empowering conversations led by mentees, and the reality of power-laden, outcome-focused, enculturating conversations led by mentors (Simkins et al., 2006). Mentors in turn often relay pre-ordained and instrumentalist intentions of strategists, becoming co-opted into the coercion of mentees in VET's mentoring schemes (Garvey et al., 2018; Gray et al., 2016; Megginson et al., 2006). Trends of instrumentalism in mentoring, which are of relevance to this current paper, include: shifting purposes of interactions, from psychosocial development to talent management, "screening in the chosen ones" (Guy, 2002, p. 33); rising expectations that mentoring will yield retention of mentees and financial returns, evaluated by asking "did it justify the investment?" (Parsloe & Leedham, 2009, p. 16); and the alignment of mentoring with solely business-focused outcomes, which serve to "recognise mentoring as a means of managing talent to achieve competitive advantage" (Carmel & Paul, 2015, p. 489). These trends reflect broader, historically embedded tensions in the purposes of VET in a capitalist economy: between VET for the societally focused pursuit of inclusive wellbeing, through critical engagement; and VET for the neoliberal pursuit of economic competitiveness, through work-readiness (Avis, 2012).

In later sections I set out local instantiations of these tensions, for faculty managers in a VET institution in the United Kingdom (UK), where the manifestations of dilemmas provide participants with impetus to redesign their own online mentoring. Mentees are middle managers of faculty, with responsibility for managing VET which include change programmes in TEL, and their mentors are colleagues in senior positions of the same institution. The sub-optimal experiences of these mentoring schemes, by both mentors and mentees, results in them coming together to better understand and deliberately influence the material conditions of managerial work and mentoring. In redesigning mentoring activity they counter the pretence of

managerial consensus, challenge business-focused outcomes and confront top-down coercion. I first set out below the dominant discourses observed in the broad context of mentoring in VET, with policy and practice tensions which inform the current paper's research question. These accounts of tensions are followed by a description of the research setting and the participants' problematic social conditions. I then describe the study's theoretical approach and methodological arrangements; cultural and historical activity theory (CHAT) (Engeström, 1987/2015) and a Change Laboratory methodology (Engeström et al., 1996). Subsequently, notable results are described and discussed, centring on the participants' development and change through collaborative identification, exposure and aggravation of their activity's primary contradictions. To close the paper, I discuss the principal contributions and further research opportunities.

2. Dominant discourses in mentoring

In the study examined in this paper, mentoring takes place through online interactions, where mentors seek to develop mentees' dispositions in managing change to TEL. For faculty managers in VET as mentees, power relationships and dominant discourses have historically affected their role development. Such mentoring schemes have been cited as influenced, implicitly and explicitly, by those in positions of power such as strategists, governors and auditors. Additionally, communicative technologies have been historically embroiled in power relationships, with mentoring platforms and media "advantaging certain groups while disadvantaging others" (Guy, 2002, p. 45). Mentoring and related technologies are thus leveraged by those in power, with dominant discourses pursuing business outcomes, shaping organisations and workers through history. Shared history of influence affects how people relate to their ability to change conditions, and how they perceive of their ability to sustain social change through time. Historically embedded dominant discourses of mentoring in VET are exemplified below, for three overlapping fields of mentoring schemes which are of relevance to the current paper: managing faculty; managing change; and managing TEL.

2.1 Managing faculty

Mentoring schemes for faculty managers have historically asserted to help confront top-down, bureaucratic, hierarchical school management systems, to "value and work with individual differences, predicated on beliefs about individual and collective agency" (Garvey et al., 2018, p. 73). It is contended that mentor-mentee engagements give middle managers the freedom to critically examine and confront, along with more experienced peers, "social constructs of what is understood by being an effective leader" (ibid., p. 137). Yet in practice, mentoring schemes for managers in VET are persistently associated with organisational efficiency, promoting business networking and nurturing their further seniority. The performativity agenda for their work pervades and influences mentoring, characterising success by a mentee's attainment of instrumentalist outcomes, and by furthering their understanding of "organisational issues, career development activities and their ability to influence" (Megginson et al., 2006, p. 175). This outcome-driven approach often results in the recruitment of mentors—by VET's strategists—based on a portfolio of business accomplishments "without concern for the needs of either mentoring pair member" (Boboc et al., 2012, p. 58). It accompanies the recruitment of mentees—also by VET's strategists—based on their exhibited appetite for "promotion, early career advancement and higher income" (Ellinger, 2002, p. 15).

2.2 Managing change

Mentoring schemes for change managers are framed as cultivating mentees' creativity, energy and enthusiasm for transforming VET, exploring alternatives to top-down change, examining with experienced peers a more "evolutionary and decentralised perspective" (Matthews, 2008, p. 43). Mentees are presented as agentic and emancipated, navigating humanistic aspects of their change to work and learning, "escaping the time pressures of their day-to-day work to reconsider their efforts to support faculty" (Kezar, 2014, p. 74). In contrast, mentoring in practice is generally subject to VET strategists' pre-ordained, top-down change directives. Mentors are expected to reinforce in mentees the normative expectations of senior leaders, governors and auditors pursuing mechanistic quick-wins where "speed to destination can only create that which has been pre-specified" (Garvey, 2006, p. 38). The inevitability of such top-down change directives, and the expected acquiescence of managers, are masked by notions of autonomy, influence and authority, cf. Parsloe and Leedham (2009); "influence, the ability to get things done, without direct line authority, is becoming a key skill at every level" (p. 328). VET's overt employability agenda further urges mentees' consensus, along with a role in coercing colleagues, illustrated by Gray et al. (2016); "the change discourse is simply a way to add pressure on people—to manipulate and scare them into compliance" (p. 169).

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2.3 Managing TEL

Mentoring in the management of TEL claims to develop confidence and competence in technology's mediation of VET. Accounts of "positive professionalism" (Hargreaves & Fullan, 2000), describe mentees working with experienced peers to "keep up with breakthroughs in the pedagogy of learning, rekindling the purpose and passion of teaching, working with others to bring about positive reforms in education" (p. 52). Yet in practice, mentoring schemes often conflate TEL with the marketisation of digital skills, promoting ceaseless implementation programmes of digital media and platforms, where success is judged by identifying the unexplored markets of "varying levels of digital literacy within the changing digital landscape" (Adekola et al., 2017, p. 8). These instrumentalist business drivers of VET are exemplified by the Open University (2019); "As the UK accelerates the adoption of digital technologies, all employees will require continuous training and retraining" (p. 5). Mentoring for the management of TEL is depicted as mentoring for the management of platforms, media and digital skills, with marketisation an indicator and metric of managerial competence. Managers face constant pressure to promote "digital engagement, a conduit to endless possibilities that can enhance every facet of what we do in education" (Sheninger, 2019, p. 45). This contrasts with TEL as a primarily pedagogical concern, where teaching and learning practices are elevated above technological platforms and media.

2.4 Implications

Dominant discourses are thus manifested in discrete yet related ways, in each of these three fields. The historical embeddedness of dominant discourses was described by Marx (1852/1934) in one of his most influential texts: "Men make their own history, but they do not make it as they please; they do not make it under circumstances chosen by themselves, but under circumstances directly encountered, given and transmitted from the past" (p. 10). I propose that reactions to these historically embedded, technologically mediated, dominant discourses provide lucrative ground for research with CHAT, through epistemic activity, where mentees and mentors examine the primary contradictions of their own activity. The remainder of the current paper analyses how participants called upon these principles, undertaking the collaborative development of their own mentoring schemes; this area of research deserves a more critical, qualitative, interventionist approach than is commonly observed (Gray et al., 2016). In the subsequent section I describe the aims of the research, followed by accounts of the research setting and the participants themselves.

3. Aims of the research

This paper examines the participants' endeavours at change as they identify and analyse *primary contradictions*, tensions between societal use of phenomena and exchange value in a transaction, emerging in capitalist economies from "the dual construction of everything and everyone as both having inherent worth and being a commodity" (Foot & Groleau, 2011, p. 5). The problematic social conditions of the participants' mentoring activity, and their reactions to those conditions, lead to the research question:

RQ: How does the developmental potential of primary contradictions relate to the redesign of mentoring schemes, by VET's faculty managers and mentors involved with change programmes in TEL?

4. Research setting and participants

This section describes the setting of the research-intervention, illustrating locally felt dilemmas and disturbances. These problematic social conditions were felt by mentees, who were faculty managers in VET responsible for change programmes in TEL, and their mentors, who were more senior colleagues in the same institution. The setting is a college of further education in the UK, which also offers higher education programmes accredited by partnered universities, apprenticeship schemes for regional employers and work-based learning of a bespoke and speculative nature. The college is located in an area of social deprivation and high unemployment. Commercial, industrial and public sector links with stakeholders across the region drive the college's strategic visions for increased workplace-relevance, high graduate employability and contribution to regional economic growth. Strategists have historically fostered and publicised an organisational culture of technological innovation, nurtured in staff and students, with overt investment programmes in digital media and platforms, the receipt of multiple awards for digital innovation, and staff development initiatives. The development of faculty managers in TEL ranges in formality, from enrolment in sector-wide flagship schemes (such as the UK's Digital Leader's Programme by Jisc, 2020) to locally managed mentoring schemes (such as the one examined in this paper).

The mentoring scheme studied below, prior to the research-intervention, was perceived by mentees as an extension of their institution's hierarchy and management system. Mentors, who were appointed by strategists for their previous business acumen and a record of income gener-

ation, had been accused by the scheme's mentee faculty managers of 'line management by other means' during mentor-mentee interactions. Mentees had perceived that the scheme's mentors had been co-opted as supplementary work supervisors, with mentors facing accusations of routinely coercing their proteges into top-down change initiatives which prioritised performativity, financial returns and student recruiting targets above the enhancement of teaching and learning. A representative from each group approached me as a prospective researcher-interventionist, having heard of a previous project with similarly problematic social conditions (described in Moffitt & Bligh, 2021). They were asked to formalise the request in writing, through which mentees and mentors set out recognition of pragmatic drivers for mentoring schemes. Yet the request also outlined several points of dissatisfaction: incorrect assumptions by strategists that experiences of mentoring were universally positive; concerns from mentors that mentees were persistently ungrateful and indifferent to their advice; and concerns from mentees of receiving unsustainable and culturally inappropriate advice from mentors.

Subsequent sections of this paper show how historically embedded, dilemmatic and socially antagonistic conditions of mentoring provided participants with impetus for envisioning and enacting change. A research-intervention was designed to enable them to engage in exposing and aggravating primary contradictions in their mentoring activity. Six mentees and six mentors took part in online workshops conducted weekly for twelve weeks. Additional tasks were conducted by participants between sessions, with follow-up consolidation taking place in the medium term, after cessation of the designed phases of the intervention and ongoing at the time of writing. The research-intervention used a theoretical framework of CHAT for the systematic analysis of object-oriented activity in context (Engeström, 1987/2015) and a Change Laboratory methodology to provide a structure for collaborative, situated and developmental change led by participants themselves (Virkkunen & Newnham, 2013). Double stimulation tasks engaged participants in a Vygotskyan method and principle to understand and change their activity (Sannino, 2015). As the researcher-interventionist, through a Marxist epistemology (from the 11th Thesis on Feuerbach, Marx & Engels, 1945/1998) I sought to empower mentors and mentees in envisioning and enacting change endeavours for themselves.

5. Theoretical framework

Using a theoretical framework of CHAT (Engeström, 1987/2015), and the research-intervention structure provided by the Change Laboratory methodology (Virkkunen & Newnham, 2013), participants expansively questioned their mentoring activity. Endeavours at undertaking change were collaborative yet problematic, social yet antagonistic, and multi-voiced yet troublesome. A Marxist epistemology helped to counter the pretence of managerial consensus in their mentoring activity, encouraging them to take ownership of coming together to recognise problems and to change their own social conditions. It is important to state that the research-intervention comprised more pursuits for the participants than are implied in this current paper. The twelve-week research-intervention called upon many theoretical principles of CHAT, following a relatively comprehensive Change Laboratory structure. The current paper is concerned principally with the developmental role of *primary contradictions*, manifested as persistent dilemmas and appearing to participants as "increasingly troubling but diffuse tensions and disturbances" (Engestrom, 2016, p. 143).

Through people's examination of activity's primary contradictions, they collaboratively reveal historically and culturally embedded problems, negotiating the impetus for envisioning and enacting change. A social group's exposure and aggravation of primary contradictions is fundamental to recognising their potential for lucrative, sustainable, qualitative development of object-oriented activity (Engeström, 2016). People using these analyses of primary contradictions to change their activity relates to dialectical materialism, an important Marxist notion implying the elevation of practical engagement above detached intellectual contemplation. Development is achieved through social engagement with the practical world: materialism describes the physical world's primacy over consciousness of it; and the notion of dialectics describes how phenomena, even those that seem unrelated, are linked with a contradictory nature driving their development (Marx & Engels, 1945/1998). A Marxist epistemology thus informs actors as they undertake social change: social structures emerge from everyday work and learning; behaviour is understood in its social context; and people recognise the limits and potential of their social activity through praxis (ibid.).

CHAT is a specific form of activity theory foregrounding temporal context and cultural mediation, where activity cannot be understood or changed without awareness of its historical evolution and the culture in which it occurs (Engestrom, 2016). In CHAT, human activity is mediated

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in complex ways and is graphically represented as a modelled activity system, where the subject—an individual or group—is oriented to the activity's object and mediated by a constellation of artefacts. An activity system illustrates this mediational relationship of production along with an activity's rules, community and division of labour, useful for studies of collaborative change endeavours in technological environments (Kaptelinin & Nardi, 2006). CHAT theorises contradictions, internal and external relationships of these elements, whilst the Change Laboratory methodology was designed by activity theorists to be commensurate with CHAT. The Change Laboratory methodology enables analyses of interactions and perspectives of shared situations, where participants become involved in developing their own work and learning activity by deepening their understanding of its contradictions. Key concepts of CHAT and the Change Laboratory methodology are described in other papers in this special issue, and are discussed below:

Artefacts are technological and conceptual tools, which mediate between people and the object of their activity. Artefacts are products of cultural and contextual requirements (Kaptelinin & Nardi, 2006), as tools (which shape the world) and signs (which shape the mind). They carry traces of their own cultural and historical development, influencing their use in mediation. Artefacts can be digital or analogue, with examples at Figure 1 which were used during this paper's research-intervention; a shared online whiteboard used by participants during collaborative tasks; documentary sector guidance on digital leadership (Jisc, 2020); and a VET membership organisation website, describing policy implications for contributions to the UK's economic recovery (AOC, 2021).

Activity describes collaborative and sustained human endeavour, mediated by artefacts, regulated by rules, with roles differentiated by specialisation and authority (Blunden, 2010). These elements of activity are visually represented as an activity system, shown at Figure 2 which is adapted from Engeström (1987/2015, p. 63). Activity is motivated toward and defined by its object; the object gives activity its purpose and meaning. As with the study examined in the current paper, relationships within and between elements of activity commonly focus studies of social groups within educational settings.

Contradictions are activity's historically emergent, systemic problems, whose resolution drives further contradictions. They are not merely more-or-less attractive dilemmas but are mutually oppositional, interdependently defining, and potentially negating of each other. In capitalist economies they originate as primary contradictions, between the use-value of activity's production (for direct application) versus the exchange-value of production (for trade with another commodity) (Engeström & Sannino, 2011). To undertake sustainable change to activity, the primary contradiction demands exposure and aggravation, to understand and develop activity through the dualistic opposition of both societal use and exchange value; "One has to take both and deal with their interplay and constant clashing" (Engeström, 2016, p. 6). Examples of primary contradictions for modern technology-mediated work activity are in Figure 3, adapted from Engeström (1987/2015, p. 90).

Ascension from the abstract to the concrete is a Marxist concept, describing progression from theorizing and observing, towards transformation and change to social activity. An abstract notion is partial, separated from the whole, one

Figure 1. Examples of mediating artefacts used during the research-intervention

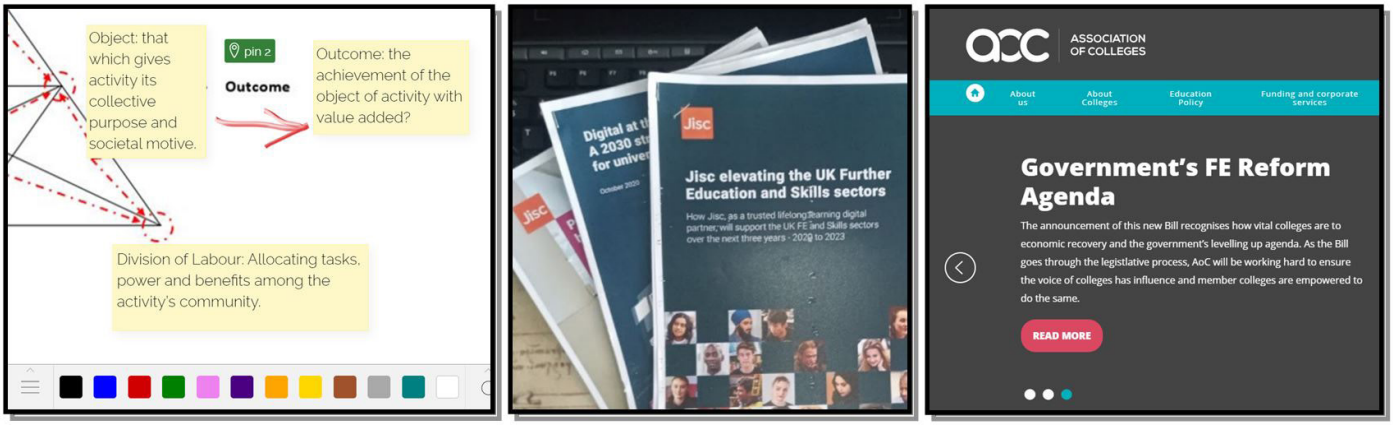

Figure 2. An activity system's elements, adapted from Engeström (1987/2015, p. 63)

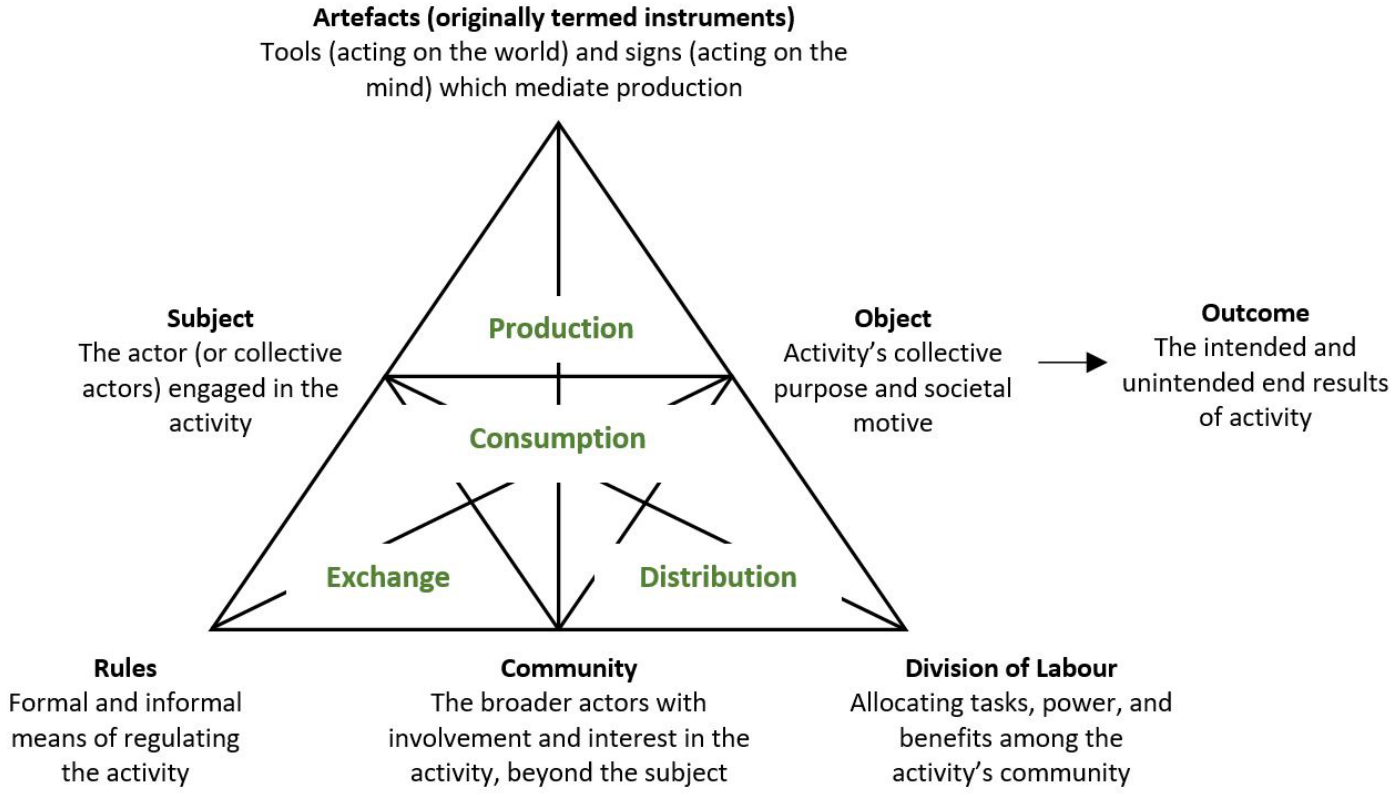

Figure 3. Primary contradictions in modern work, adapted from Engeström (1987/2015, p. 90)

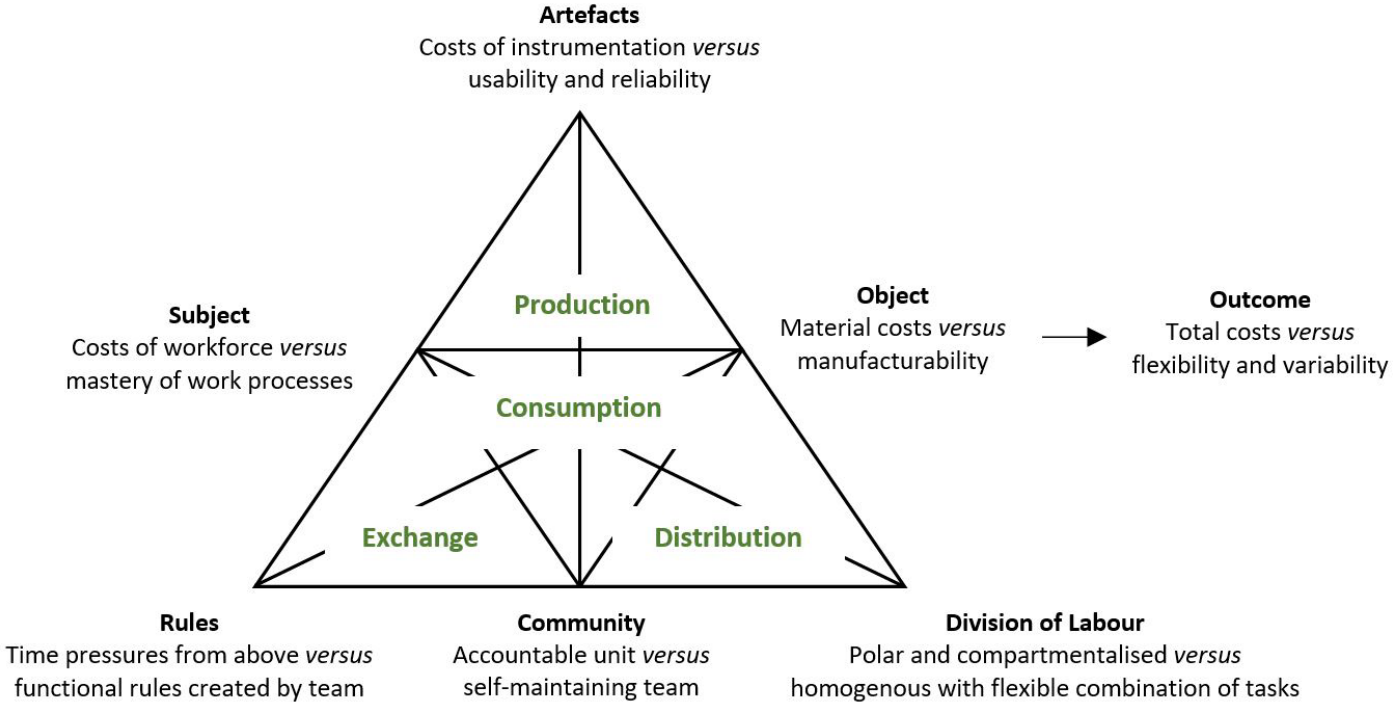

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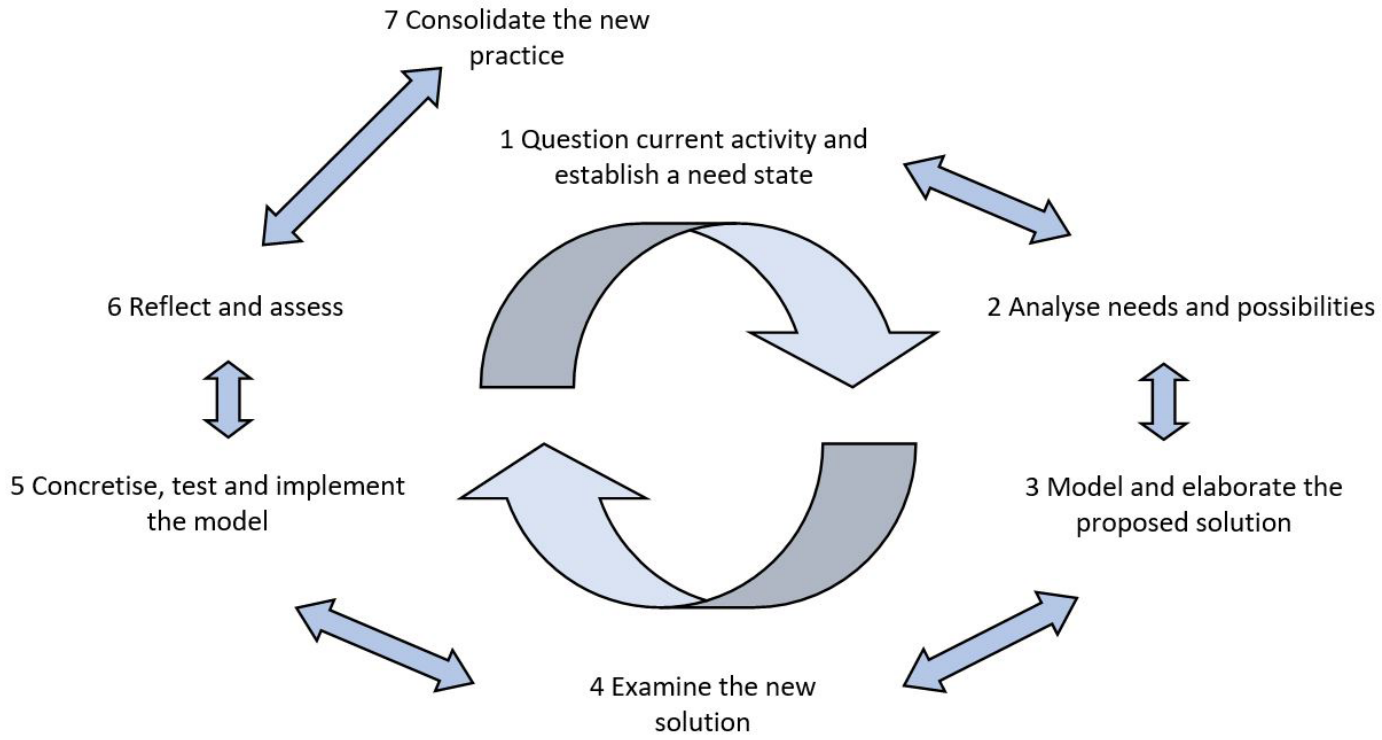
Figure 4. Actions in expansive learning, adapted from Engeström (1994)

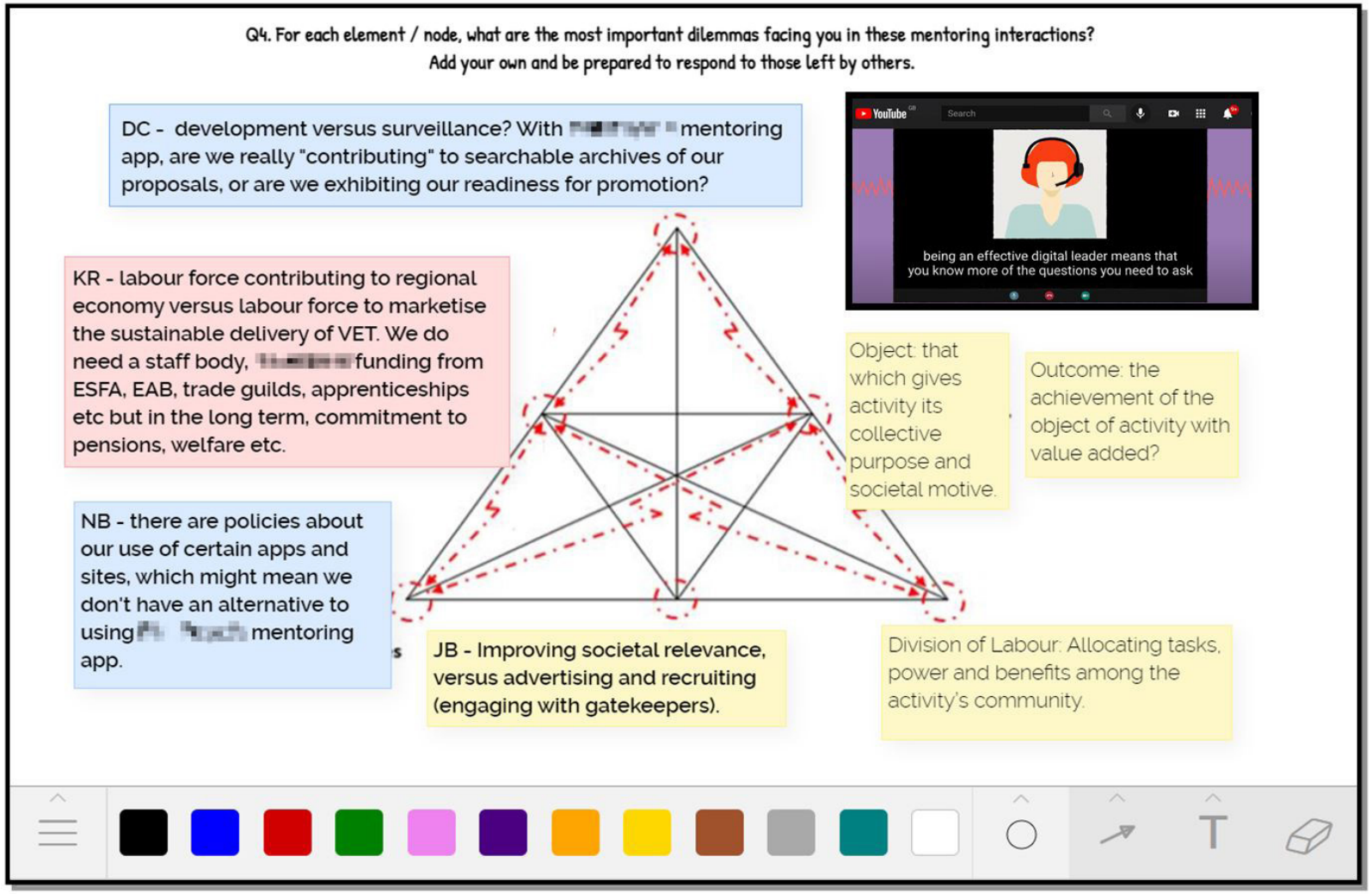


which is undeveloped and "thin in content" (Blunden, 2010, p. 62), whilst a concrete notion is more developed, with multiple connections, one which is "rich in content" (ibid.). Of note, the term ascension may imply vertical movement upwards, although it encompasses horizontal and relational expansion of social phenomena, as they form connections with many other social phenomena (Engeström & Sannino, 2016).

Expansive learning describes the collaborative reimagining of human activity, as a group undertakes ascension from the abstract to the concrete, in this study through CHAT and a Change Laboratory methodology. A process of cyclically reconceptualizing activity involves reconsidering and expanding its object, tracing activity's inner contradictions to reach "wider horizons of possibilities" (Engeström, 2001, p. 137). Expansive learning has a relatively stable, iterative cycle shown at Figure 4, which is adapted from Engeström (1994). It will not return to its original position, with recursive and iterative sub-cycles more accurately described as a spiral, since it will not return to the same position. This is likened to concretisation's "negation of the negation" by Blunden (2010, p. 62). Ideal-typical expansive actions lead to participants' qualitative transformation of activity: questioning; analysing (historical-genetic and actual-empirical); modelling; examining the model; implementing and concretising the model; reflecting and evaluating; and consolidating and generalising. The exposure and aggravation of primary contradictions are often associated with "the first learning action of questioning" (Engestrom, 2016, p. 27), which comprises criticism of extant practices and plans, whilst resisting conventional developmental attempts such as those imposed by managers.

Double stimulation (or dual stimulation) is a Vygotskyan method and principle (Sannino, 2015), inspiring task designs for participants to complete during Change Laboratory sessions, which in this study were undertaken during online workshops. The first stimulus comprises the task specification, with conflicting motives for participants, such as a problem statement or question about their failing current activity. The second stimulus is the analytical tool or method which participants are invited to think with whilst they address the first stimulus, such as a modelled activity system with historically and culturally embedded elements. In undertaking these tasks, participants refer to mirror-data; materials providing researchers and participants with irrefutable evidence of problems. Double stimulation tasks benefit from intense consideration of contradictions; without conflicting motives and the participants' volition to work through them, attempts at double stimulation revert to general mediation (Sannino & Engeström, 2017). An example

Figure 5. A double stimulation task in progress



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of a double stimulation task is in progress at Figure 5, using an online collaborative whiteboard, Limnu®. In the task, mentees and mentors are debating their individual and joint responses to their first stimulus; the question "Q4" to the top of the screen. The provided second stimulus was the partially completed activity system, shown being embellished with comments. Near to the top right is a YouTube™ link to mirror data.

Across the research-intervention participants engaged in twelve, weekly, online workshops. The principles above informed participants as they exposed and aggravated contradictions, legitimising their problematic interactions, criticism and resistance as the intervention unfolded. CHAT provided a theoretical framework for analysing participants' interactions with each other and with mediating artefacts, while the Change Laboratory methodology provided dialectical means for their ascension from the abstract to the concrete, stimulating expansive activity through double stimulation. The Change Laboratory's methodological aim is to foster expansive learning for participants; engaging in double-stimulation tasks, understanding the historical evolution and current state of activity, and identifying implications for change (Sannino & Engeström, 2017). The developmental starting point is with activity's contradictions, exposed and aggravated through their multi-voiced negotiations during double stimulation tasks. Participants thus take charge of changing their own activity using cues such as expansive cycles, historical and future visions of activity, video media 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).

As the researcher-interventionist, I worked with participants to provide them with meaningful stimuli, to guide their expansive learning through double stimulation tasks, in consideration of locally meaningful change to their activity and the sustenance of change through time and new social structures. As participants negotiated and modelled their primary contradictions, their stimuli and mirror data were curated to promote oscillations between top-down and bottom-up moments for change, in ways which can be described as an "activity whose object is to produce other activities" (Bligh & Flood, 2015, p. 142). As they progressed in their tasks, I concurrently took a less active role and encouraged them to take ownership of the direction and process of change for themselves, which is typical of researcher-interventionists following a Change Laboratory methodology. The subsequent section presents participants' evidence of double stimulation tasks, characterising how mentors and mentees exposed and aggravated primary contradictions and exploited the resulting impetus for change. The data are illustrative of mentors and mentees exposing and aggravating primary contradictions in their activity; becoming empowered to expansively redesign their mentoring schemes for themselves; and relating their increasing understanding of contradictions to qualitatively meaningful change.

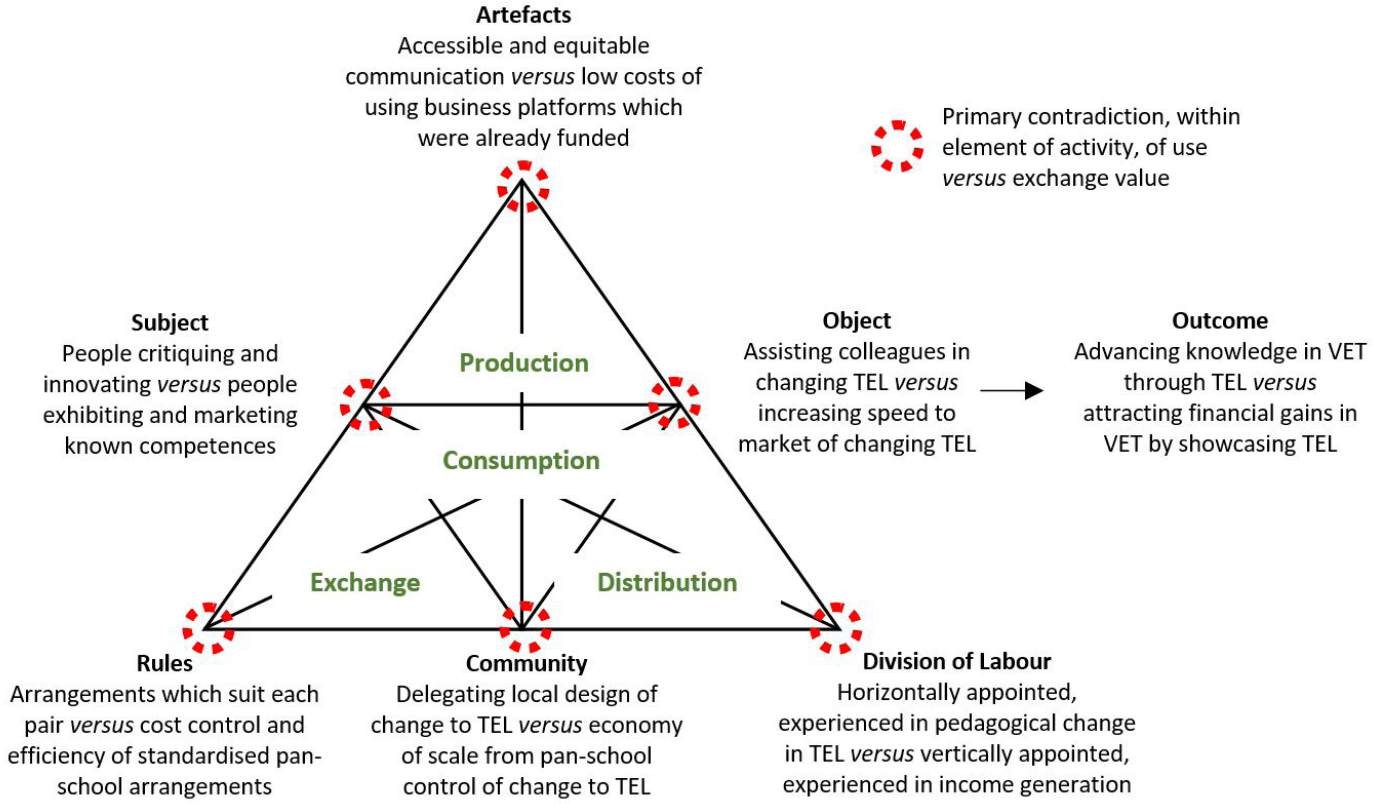
6. Results

This section summarises results of double stimulation tasks, directed by participants at their activity's primary contradictions. A series of tasks are described, with participants' proposals for change and their analytical representations of activity systems used by them to identify and diagnose developmental opportunities. These models and proposals were reintroduced as first and second stimuli for successive tasks, whilst video recordings of their compilation and negotiations often became mirror data for those same successive tasks. This section's results are structured to reflect the participants' analyses of their past, present and future mentoring activity. Firstly, each sub-section has an overview and a graphical activity system, summarising the participants' analyses of primary contradictions in their mentoring activity at that point in time. The figures are adapted from the culmination of participants' online work on collaborative whiteboards, as illustrated in Figure 5. Secondly, a selection of quotes exemplifies their multi-voiced negotiations, and the discursive interplay as they aggravated these primary contradictions, "between emotional involvement and theoretical-genetic reflection" (Virkkunen & Ahonen, 2011, p. 237). Thirdly, a summarising statement describes theoretical and methodological points of interest, with salient observations to take forward to discuss in the subsequent section of this paper.

6.1 Past activity

Figure 6 summarises primary contradictions in past activity for mentoring (conceived by participants to represent mentoring within the last twenty years). The object of past activity was determined by the group to be "*Mentoring faculty managers, to enable them to manage change to TEL whilst minimising resistance from the people they manage*". The subject comprised past mentors and mentees, some of whom were in this group. Mediating artefacts were communicative technologies which had been used during routine work tasks: platforms and media for emails, voice calls, video calls and digital office applications for business productivity. In this example, the task's first stimulus provoked participants to consider mentoring in the past, to express historical activity's primary contradictions, as concise 'use versus exchange value' statements for each of the elements.

Figure 6. Primary contradictions in past activity, whose object was "Mentoring faculty managers, to enable them to manage change to TEL whilst minimising resistance from the people they manage"



Their provided second stimulus was a partially completed activity system, whose elements they had previously labelled without progressing to contradictions. Mirror data comprised documentary policies, video footage of staff at work, and historical performance reports.

The examples of speaking turns below were expressed during the double-stimulation task which generated the activity system in Figure 6. These were extracted from data in the third and fourth online workshops, when participants were disputing the primary contradiction in the *object* of their past activity, having attempted the task individually prior to collaboratively comparing their responses. The examples begin with a participant enquiring why there is the necessity of an opposition of use and exchange value. Another frames and clarifies the opposition of use versus exchange value, using a local example of VET institutions in the surrounding area. This leads to concerns of a disproportionate past focus on financial acumen. Participants discovered diverging conceptions, of past activity as a whole and of its object in particular: they were divided not between mentors and mentees, but between those who sought agentic liberation for faculty colleagues (as use value), and those who prioritised competitive financial health for the college (as exchange value).

> "I know we've all found things to write for each side for this [primary contradiction of the object], but why couldn't this [object] have benefitted society at large and have helped us with our income streams? Why did it have to be one or the other, not both?" *[HB, mentor]*.
>
> "It's always been in the DNA of the place, turning profit, but when we've turned a profit someone else lost out didn't they, for us to have won someone's lost, you can see that can't you? We don't come in on a Monday thinking 'let's make these lovely people critically engaged citizens of the big wide world' [laughter]. But maybe we should. We're still here, we did alright at selling our courses, down at [another college] they didn't sell theirs, so they closed, are we really better?" *[DC, mentor]*.
>
> "That's commie talk! [laughter]" *[HB, mentor]*.
>
> "Fair enough, but if us winning meant some poor bastards down the road losing, they lost their jobs on

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> account of us in here winning and keeping ours, is that funny for you too?" *[DC, mentor]*.
>
> "I'm with [DC]. Ten years back, five years back, it was the main thing, for us to be a part of all that, the financial health, we're not stupid, we know the point of this place and it's part of who we are, to get them all [students] ready for a job, and to keep our [lecturers] in their jobs, it's why we're still here and others folded, but the salesman malarky was taking the piss at times." *[NB, mentee]*.
>
> "The last twenty years it's been the same, at times there was a Sword of Damocles at my neck down in [division]. If I didn't spread the gospel, sell-sell-sell, I wouldn't be here managing [divisional team], there probably wouldn't be a [divisional team]. I had to think about beating [other college], sell more courses than them, get our tech rolled out faster than theirs, keep a spot on the podium, we had to survive, but all the selling, well I suppose it did divert my attention from people I was meant to be managing, while I had an eye on the big prize." *[KR, mentee]*.

These data show dilemmatic conditions of daily reality being related to primary contradictions: mentoring to develop faculty in TEL (use value); versus mentoring to hasten speed to market of TEL (exchange value). Participants initially risked entrenchment in one perspective or another, whilst respecting the contrary opinions of their colleagues. As antagonistic standpoints were legitimised and normalised amongst the group, negotiations became correspondingly multi-voiced, problematic and discursive. Primary contradictions were referred to in countering the pretence of consensus, exemplified by the challenges "That's commie talk!" and "is that funny for you too?". Examining past activity assisted participants' recognition of historically embedded problems in their mentoring, with no apparent resolution in the past two decades between the need to "sell our courses" and to educate "citizens of the big wide world". The primary contradiction of the object of past activity, reached by such discursive negotiations, was determined to be represented by "*Assisting colleagues in changing TEL versus speed to market of changing TEL*".

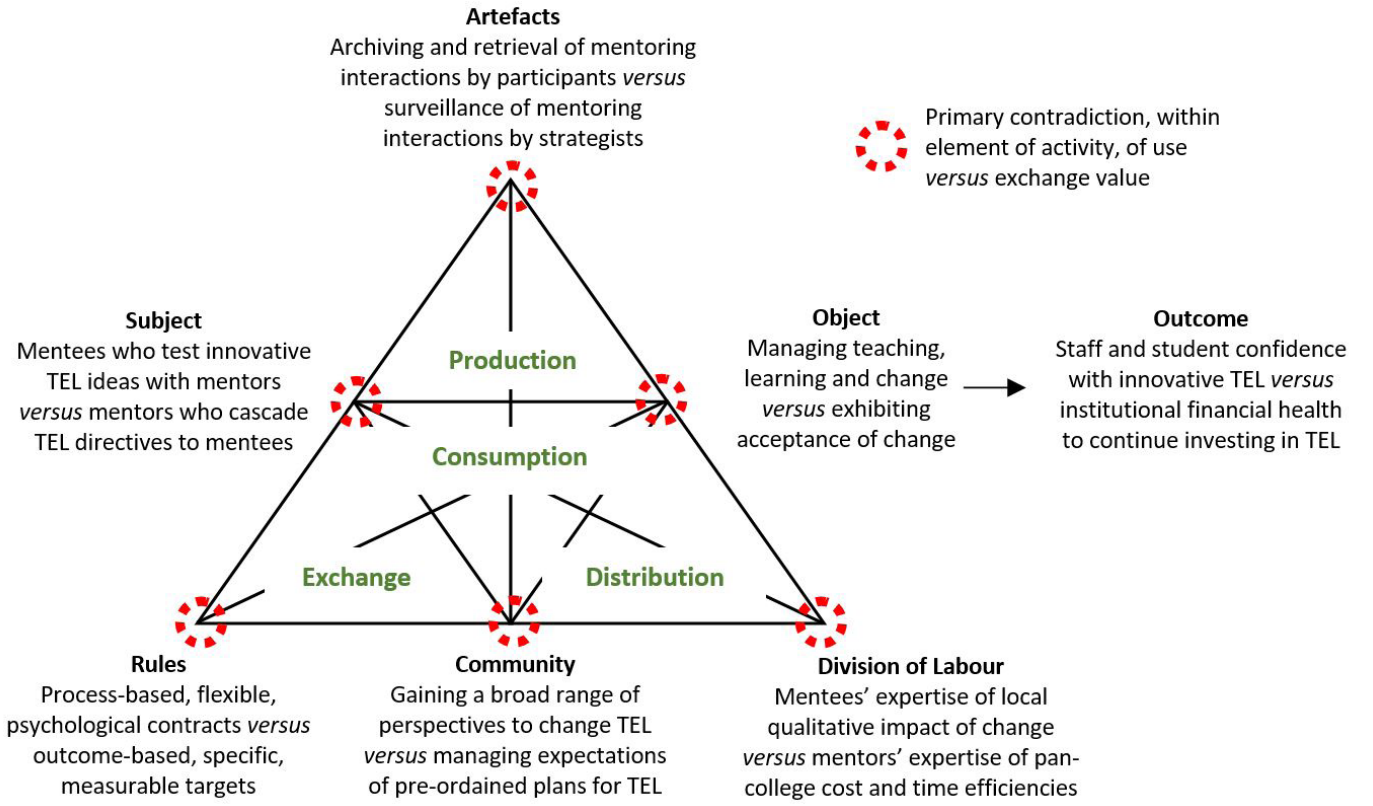
6.2 Present activity

Figure 7 summarises primary contradictions in present mentoring activity. The object was determined by the group to be "*Mentoring to manage change to TEL while maximising the engagement of staff*". The subject comprised the participants themselves. Mediating artefacts for extant mentoring were communicative technologies used in routine managerial interactions, principally business platforms for web-based video calls, with mentor-mentee interactions recorded and archived on the enterprise's servers. The first stimulus provoked participants to concisely express primary contradictions in their present activity. Their second stimuli included a partially labelled 'present activity system' and the modelled primary contradictions from the 'past activity system' shown in Figure 6, which they were invited to adapt and think with whilst modelling contradictions and tracing their activity's evolution. Mirror data comprised video footage of work and learning, media portraying college and sector policies on TEL and related changes in VET, and previous interactions of the participants in their online workshops.

The examples of speaking turns below were expressed during the double-stimulation task to model the participants' present activity for mentoring, shown in Figure 7. The data were gathered from the sixth and seventh online workshops, at around the mid-point of the research-intervention. In these examples of speaking turns, participants were disputing the primary contradiction in the *rules* of their present activity, comparing their individual responses as they jointly authored their model. The examples begin with questioning the assumption that processes, as discrete from outcomes, are necessarily positive in TEL, in VET, and in work and learning generally. Mentors and mentees then negotiate how activity ought to be regulated: as flexible mentee-led processes; or as measurable mentor-led outcomes. There is an important revelation that mentees feel it necessary to conduct rule-bending and rule-breaking through illicit, secretive and *sub-rosa* interactions with teams, masking supportive interactions from the enquiry of mentors and strategists. Participants recognise dilemmas in their daily activity of regulating mentoring, as further manifestations of primary contradictions between: being guided by process-based, flexible agreements (as use value); and being measured by specific, outcome-based targets (as exchange value).

> "So, there are tacit rules, just the way we do things here, like that we're expected to get them [faculty] all engaged and interested in changes to TEL, to feel confident, and there are written rules, formal rules, like rules to get X percent of staff through online safeguarding, and Y percent of our team every year certified as Microsoft Innovative Educators. Which matters more though? It's lovely to be empowered to do what you like, but we've got KPIs [key performance indicators] too." *[HB, mentor]*.

Figure 7. Primary contradictions in present activity, whose object was "Mentoring to manage change to TEL while maximising the engagement of staff"



"The ironic thing I think is that written rules like those KPIs are easier for a lot of people, the ones you call tacit, they mean different things to different people, but a written measurable outcome, at least you know when you get there, do your own RAG [red, amber, green] assessment. Like I know loads of people who just aren't into being critically engaged, their rules aren't the same, they'd rather be told look just be in work before x o'clock and go home after y o'clock and do this if you want to keep getting paid, we'll all be fine. Same with a lot of our [students], they don't want critical engagement or to be asked their opinions about TEL, they want a firm, easy to understand, list of what to do and when to do it to pass and get out of here." *[WA, mentee]*.

"This though [circling primary contradiction], if they [strategists] can drag in a few quid by advertising that a load of staff got across the line as Microsoft and Apple educators, and all that other stuff, outcomes, targets, green KPIs [key performance indicators] they can fund more and more education and training, more than they can fund now by just saying hey [regional employer] look at us, we're all critically engaged and shit, isn't it a great skill to have criticality, why not buy even more [learning programme] from us, send your apprentices here and we'll send them back all critical and stuff, just what you need I bet, better than knowing how to make things in the real world." *[HB, mentor]*.

"Well maybe all we can do is the least-worst option then, the alternative is we all lose when the place closes because we didn't get enough funding in, but we'll all be so jolly well critically engaged while we're having a debate in the queue for the food bank. All we can do is find the least-worst way, keep an eye on what [regional employers] need, but be more about the processes of mentoring so that our own [faculty] can contribute, the relationships and building them, what we can do for our people when TEL is changing for them, to make things better for them." *[NB, mentee]*.

"That could work, like a psychological contract with [strategists], having an adult conversation about what we want to get from [mentoring] and what they want us to get from it. As it is at the minute, there are loads of things I do with my teams that I'd never tell them

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> [strategists] and I wouldn't tell you lot [mentors] about, no offence, because those chats around the place, in the corner of a workshop to make someone feel like they're doing well, that they're needed and wanted, they don't appear on inspection reports or adverts on the side of buses or whatever. Mentoring is meant to be more productive when it's got mutual trust, but judging us against each other, by what income we're supposed to have brought in by the end of it, that isn't exactly trusting." *[KR, mentee]*.

These examples show the participants' increasing recognition of the primary contradiction, socially building accounts of manifestations in the disturbances of their own daily reality. The examples highlight their growing awareness of the inability of the primary contradiction to be truly resolved, yet the importance of continuing to aggravate it. The "least-worst option" for change was to pursue flexibility in the regulation of mentoring, yet to recognise an inevitable drift back to business-focused outcomes. The primary contradiction was then used as retrospective justification for bending rules, conducting illicit developmental interactions. In being tasked to pursue pre-ordained targets, participants recognised the perspectives of strategists who need to regulate mentoring to attract funding, exemplified by the remark "the alternative is we all lose when the place closes". Yet they also used it to underpin humanistic managerial interactions, to "make someone feel like they're doing well" which wouldn't necessarily be measurable as a financial benefit of mentoring. The primary contradiction of their rules was eventually decided as "*Process-based, flexible, psychological contracts versus outcome-based, specific, measurable targets*".

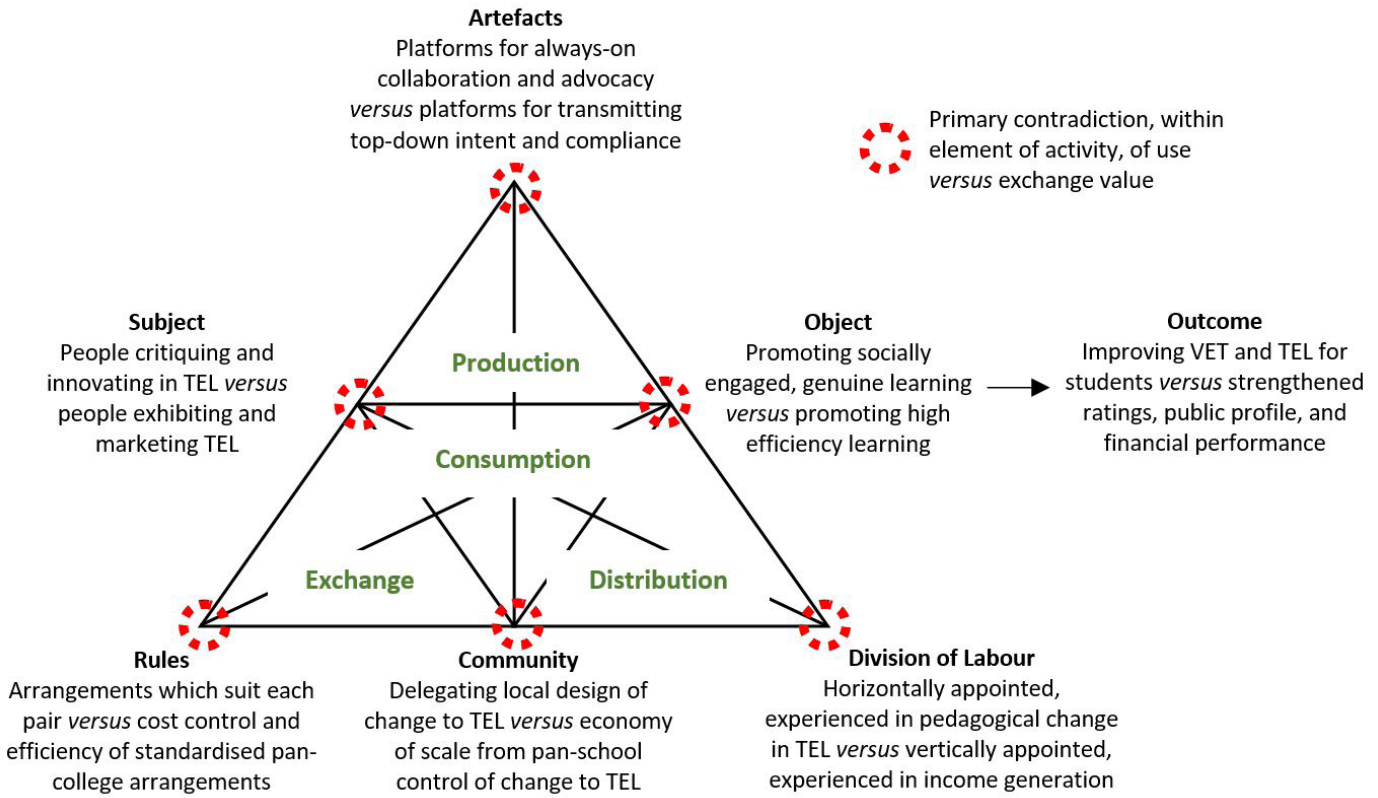
6.3 Future activity

Figure 8 summarises the modelling of primary contradictions in future activity for mentoring, conceived by the group to predict arrangements for the subsequent ten years. The object of future activity was determined to be "*Mentoring to manage change to TEL to improve learning*". The subject comprised future mentors and mentees, including some but not all of the participants themselves. Future mediating artefacts were predicted to be a constellation of media and platforms, selected by mentor-mentee pairs to suit their own ways of interacting; only *by exception* were they to be institutional 'business as usual' platforms and media. The task's first stimulus provoked participants to express primary contradictions as concise 'use versus exchange value' statements. Their provided second stimuli included a partial 'future activity system' and a complete 'present activity system', including their work on primary contradictions in Figure 7, which they were invited to adapt in proposing contradictions. Mirror data comprised footage of their own previous interactions, and video media from the college and across the VET sector.

The examples of speaking turns below were expressed during the double-stimulation task, to model the future activity system shown in Figure 8. These data were gathered during the ninth online workshop. In the examples, participants collaboratively examine and dispute the primary contradiction in the *artefacts* of future activity, having previously responded to the task as individuals. Following initial discussions of the need to differentiate future artefacts from those in the past and present, negotiations turned to the potential manifestations of the primary contradiction in the daily reality of future mentoring activity. The implications of the primary contradiction of artefacts were discussed as dilemmatic choices, such as those between: bespoke technologies, selected by each pair for always-on interactions of support and advocacy; and standardised technologies, implemented for efficient monitoring of progress toward outcomes.

> "I get that it'd be nice for each [mentor-mentee pairing] to pick how they want to do everything, and we can add stuff to our [institutional] app stores. But surely, it'll be easier for these people, oh the future us, if we just all use the same apps to meet up, all the site-wide licensing is already done, they or we can pull up the digital records of how they get on, what they commit to and whether they get over the line, they can access it all, surely that's easier." *[HB, mentor]*.
>
> "It's easier, yes. You're proving the point there, it's easier, but that's not the object, the point of it look. And using that business-as-usual stuff [artefacts] will keep making mentoring part of being managed, that's why it's got to be different for us, for the future us, so that it [mentoring] isn't something being done to them like it's being done to us, picking them [artefacts] it's something for them to get stuck into, and mould, and make decisions about. Otherwise stop calling it mentoring and just let our line managers do it." *[DL, mentee]*.
>
> "If you make them use the tech they'll be using for other things at work, well it's [mentoring] back to where we started with this [intervention], where your mentors, no offence, they're a plain-clothes division of line managers, again no offence but that's the way it's done now, it's just the cheapest, fastest, easiest way of getting their [strategists] messages sent down to us, checking we understand what we've got to get done, when we've done it, what

Figure 8. Primary contradictions in future activity, whose object was "Mentoring to manage change to TEL to improve learning"



> we're supposed to be passing on to everyone else. It doesn't have to be the same for them as we've got now." *[PL, mentee]*.
>
> "I think we've got to be careful though, they [strategists] think they're doing a decent job of letting us manage TEL by replacement programmes every five minutes and software upgrades every night, but there's no platform out there that's going to have those panacea-like qualities they promise. If it's [technology] any good it'll facilitate a nice chat, or if it's crap it'll be a nuisance, but the tech isn't going to actually do the mentoring is it, so we've got to show that on here [modelled activity]." *[HB, mentor]*.

Patterns were identified through time, represented in the predicted manifestations of the primary contradiction of future activity's artefacts: between the use-value of platforms for contrarian debate and idea-sharing; versus the exchange-value of platforms for the rapid dissemination of top-down directives and monitoring progress toward outcomes. Primary contradictions, even of future activity, were recognised as irresolvable yet worth ongoing examination to guide the sustenance of change. Regarding the primary contradiction for artefacts, the predicted manifestations included significant dilemmatic choices: the need for mentors and mentees to "get stuck into, and mould, and make decisions about" when selecting their digital platforms (as use value); and the need to monitor business outcomes, "what they commit to and whether they get over the line" with digital platforms (as exchange value). For future activity, the primary contradiction of their artefacts was adopted as "*Platforms for always-on collaboration and advocacy* versus *platforms for transmitting top-down intent and compliance*".

7. Discussion

The activity systems and quotes in the results summarise how participants engaged with task stimuli, with mirror data and with each other. Their task stimuli were imparted with qualitative meaning, as double-stimulation tasks enabled investigations of primary contradictions through the past, present and future, informing their change to activity. In this paper's opening sections, references were made to

https://doi.org/10.21428/8c225f6e.d6321ead

rhetorical policies in VET's mentoring schemes, with claims of developing faculty managers in self-direction, criticality and advocacy, providing "opportunities to reduce the sense of isolation … individuals can grow and strive for new levels of achievement" (Boboc et al., 2012, p. 61). Yet the practical reality of mentoring in VET is recognised as more likely to "encourage employees to feel appreciated by the organisation" (Carmel & Paul, 2015, p. 480), developing business competence in preordained ways for VET's neoliberal markets, with mentor-mentee interactions "probably more related to training" (Radel, 2019, p. 774). The data above illustrate local instantiations of participants' multi-voiced and troublesome interactions—a principle of CHAT which is fundamental to the Change Laboratory methodology—whereby these participants rejected dominant discourses, called upon a Marxist epistemology to confront and change failing activity for themselves, redesigning sub-optimal aspects of their mentoring schemes.

In consideration of the research-intervention's results, my claims for the developmental potential of primary contradictions are threefold. Firstly, the development of mentoring was strengthened by a shared awareness of contradictory purposes and drivers, contrasting with the pursuit of managerial consensus. Secondly, the development of mentoring was reinforced by an awareness of regulation through processes, rather than solely business-focused outcomes. Thirdly, the development of mentoring was augmented by technologies which mediate interactions for advocacy, debate, and collaboration, as discrete from the top-down transmission of edict. These claims are expounded below, relating this paper's study to the policy-practice tensions and dominant discourses of the opening sections. As with those earlier sections on dominant discourses, the following discussions are presented as three overlapping fields of mentoring for the study's faculty managers in VET: managing faculty; managing change; and managing TEL.

7.1 Primary contradictions in mentoring for managing faculty

Research in the paper's opening sections describes tensions in mentoring for faculty managers. Claims of mentoring relationships "predicated on beliefs about individual and collective agency" (Garvey et al., 2018, p. 73) are countered, by practice which focuses instead on "organisational issues, career development activities and ability to influence" (Megginson et al., 2006, p. 175). In this study, the latter instrumentalist approach is reflected in financial outcomes, and the appointment of mentors with demonstrable market success. Yet the participants negotiated in ways which contrast with instrumentalism: individuals recognise both the use-value of bottom-up liberation and the exchange-value of top-down enculturation, negotiating each as a group, whilst recognising primary contradictions and the broader societal context of VET. Conceptions of primary contradictions were not divided between mentors and mentees, but between those who favoured agentic liberation, and those who favoured financial wellbeing. Participants collaboratively dismantled the pretence of managerial consensus, empowered in the group's social setting, encouraging each other to expose and aggravate primary contradictions and to recognise the manifestations and implications in their daily reality.

7.2 Primary contradictions in mentoring for managing change

The opening sections of the paper described policy and practice tensions in mentoring for change management: between preordained quick wins (Parsloe & Leedham, 2009) and creative, decentralised endeavours (Matthews, 2008). This study's participants recognised contradictions in activity's rules, between regulating the attainment of outcomes and regulating engagement in relationships and processes. They collaboratively realised the irresolvable nature of the primary contradiction: policies led by mentees and focused on exploratory processes; practices driven by mentors and focused on preordained outcomes. Their "least-worst option" was deemed to be the pursuit of processes led by themselves, whilst recognising a persistent drift to business-focused outcomes. The exchange value of outcomes is similar to the journey metaphor of Garvey (2006) where a disproportionate focus on destinations in mentoring for change "discourages savouring the journey, exploration and discovery of the unknown, and contributes little to reflection and reflexivity" (p. 38). This study's mentors and mentees have shown that, by aggravating contradictions, mentoring can be regulated through processes and relationships.

7.3 Primary contradictions in mentoring for managing TEL

The early sections of the paper describe a role for technology in polarisation of groups in VET, described by Avis (2012) as partitioning two camps; "knowledge workers experiencing digital Taylorism, and an elite who are deemed to possess the skills and creativity" (p. 4). In this study, the competitive and performative environment appears to exacerbate polarisation, with camps distinguished not between mentors and mentees, but between those pursuing liberation and those pursuing financial security. By exposing and aggravating the primary contradiction, participants recognised enduring and irresolvable tensions, resulting in the envision-

ing and enactment of change which counters coercion of the elite. The irresolvable nature of use and exchange value was related to the potential of technological artefacts to mediate supportive interactions, with the alternative function of efficiently transmitting top-down directives. Expansive analyses called upon primary contradictions of the past and present, predicting primary contradictions for the future: between platforms mediating collaborative advocacy, contrarian debate and idea-sharing; versus platforms mediating the rapid dissemination of coercion and auditable compliance.

The research question asked about the developmental potential of primary contradictions in the redesign of mentoring schemes. At the overlap of the three fields above, the findings of this research-intervention are expansive yet modest, changing TEL for the participants themselves and for those whom they manage, with discernible expansive change to their own mentoring schemes. The changes counter the pretence of managerial consensus, challenging solely business-focused outcomes, and confronting top-down coercion and edict. Double stimulation tasks provoked qualitatively meaningful and sustainable change at a local level, with participants redesigning mentoring as an alternative to unquestioned compliance, a notion discussed by Diochon et al. (2018); "the managerialist way of organising [mentoring] has various practical benefits of structure and progress against a timeline, but how far is this adequate for guiding [mentees] within this complex, intercultural and global world where uncertainty is the only certainty?" (p. 14).

Participants have responded, with change informed by the "foundational relationship between use value and exchange value" (Engeström, 2016, p. 72). They recognised the persistence of irresolvable primary contradictions; "even if attempts to resolve the other levels of contradictions are temporarily successful, the primary contradiction remains" (Foot & Groleau, 2011, p. 6). The Marxist epistemology of the research-intervention opposes mentoring as part of the managerialist discourse in VET, confronting 'line management by other means' by recognising the developmental opportunities of primary contradictions; a distinguishing feature of activity theory (ibid., p. 5). Whilst recognising modest successes, further expansive work is needed to allay methodological reservations: of smaller studies being truly expansive (Engeström, 1999); of over-simplifying CHAT by merely modelling activity (Karakus, 2014); and of confusing analysis with rhetorical labelling of activity systems (Rogers, 2008). The research-intervention was socially antagonistic, yet it has not initiated widespread radicalism, instead modestly exemplifying "transformations within and between activity systems that do not necessarily require a large-scale political confrontation" (Engeström, 2016, p. 72). The conclusion relates these findings to broader concerns of TEL which were set out in the opening to this paper.

8. Conclusions

This paper opened with a discussion by Junior et al. (2014) of primary contradictions, suggesting that they are lucrative for people changing sub-optimal social activity. Through a Marxist epistemology, mentors and mentees in VET have exposed and aggravated primary contradictions, helping them to understand how to envision, enact and sustain change to their own mentoring activity for faculty undertaking change to TEL. Junior et al. note that "Marxist materialism underlies the work of Vygotsky, both in his idea that higher mental functions are originally related to concrete social phenomena, and in his approach to mediational tools as a main element for human activity" (p. 549). The results exemplify collaborative exposure and aggravation of primary contradictions, with a social collective coming together to identify impetus for change in their problematic circumstances. Through understanding the meaning of historically embedded primary contradictions, participants confronted business-focused instrumentalism of mentoring schemes for change in TEL. Faculty managers and their more experienced colleagues have identified, appropriated and adapted mediating artefacts to change their material conditions, "to empower themselves and fulfil their objects" (Kaptelinin & Nardi, 2006, p. 248).

The paper illustrates participants reacting to their problematic conditions, calling upon a Marxist epistemology with a theoretical framework of CHAT and a Change Laboratory methodology. A Marxist epistemology for engaging in the realisation of change, as discrete from detached intellectual contemplation, has challenged the notion of faculty managers in VET as being "locked away in some secret enclave … spinning webs and planning reforms … motivated by self-interest and driven relentlessly by strict adherence to a financial bottom line" (Brookfield, 2017, p. 244). These mentors and mentees aggravated and used primary contradictions to understand and negotiate implications of use and exchange value, recognising manifestations in their daily reality of mentoring, and for their managerial roles in supporting faculty for change in TEL. The outcomes of the research-intervention have solved problems, and generated others, for the participants' own TEL and their management of TEL for others. As a result participants made expansive change to their own online mentoring schemes, and to TEL for others, for whom they hold managerial responsibility as faculty managers. A caveat for these claims is that expansive change is never complete.

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Acknowledgements

The author would like to express appreciation to the anonymous reviewers for their constructive comments on previous versions of this paper.

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