Routledge
Taylor & Francis Group

Studies in Continuing Education

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/csce20

Learning, instruction and assessment in the workplace: applying and augmenting Communities of Practice theory

Jonathan Tummons

To cite this article: Jonathan Tummons (02 Jul 2024): Learning, instruction and assessment in the workplace: applying and augmenting Communities of Practice theory, Studies in Continuing Education, DOI: 10.1080/0158037X.2024.2372490

To link to this article: https://doi.org/10.1080/0158037X.2024.2372490

Published online: 02 Jul 2024.

STUDIES IN CONTINUING EDUCATION
https://doi.org/10.1080/0158037X.2024.2372490

Routledge
Taylor & Francis Group

Learning, instruction and assessment in the workplace: applying and augmenting Communities of Practice theory

Jonathan Tummons

School of Education, Durham University, Durham, UK

ABSTRACT

Derived from an ethnography of workplace cultures and practices, this article rests on a critical application and augmentation of Communities of Practice theory in order to account for the ways in which the assessment of complex and heterogeneous workplace learning can be conceptualised. Exemplified through a series of vignettes constructed from the ethnographic data, the article foregrounds a variety of experiences of assessment – formal and informal – that characterise the trajectories of workers as participants within the Community of Practice. In addition to providing an account of a qualified and specialist workforce, this article also provides an exemplar for ethnographic research as a vehicle for exploring the assessment of workplace learning through Communities of Practice theory. This exploration is accomplished in two ways: firstly, through a critical use of certain paradigmatic elements of the theory; secondly, through the augmentation of the theory in order to address some of these past critiques whilst maintaining the epistemological coherence of the theory as a whole. The article concludes by arguing that Communities of Practice theory can be critically applied in order to generate ethnographic accounts that valorise the richness and complexity of the practices being assessed.

ARTICLE HISTORY
Received 3 November 2023
Accepted 20 June 2024

KEYWORDS
Assessment; communities of practice; ethnography; legitimate peripheral participation; workplace learning

Introduction

In 2022, I conducted an eight-month ethnography at a cycle technicians' workshop in the North of England. My broad interest lay in an inquiry into the social and material cultures of the workshop as a bounded space within which particular episodes or instances of learning as social practice might be observed and made sense of. One of the research questions that underpins the ethnography as a whole is: *how do people learn how to become cycle technicians?* In order to approach this question, I have drawn on Communities of Practice (CoP) theory (Lave and Wenger, 1991; Wenger, 1998): I posit that the workshop constitutes a Community of Practice (Tummons 2022a, 2023a, 2023b) and I go on to describe it (below) drawing on key components of CoP theory. Within this article, I

CONTACT Jonathan Tummons jonathan.tummons@durham.ac.uk School of Education, Durham University, Confluence Building, Durham, DH1 3LE, UK

address a more specific sub-question: *how can instruction and assessment be made sense of within a Community of Practice?* In addressing this question, I have sought to make sense of a number of practices that I have identified within my data that pertain to different forms of instruction and assessment in both formal and informal senses. But in order to reconcile this discussion with CoP theory, I have to respond to particular critiques of CoP theory. In so doing, I propose a theoretical augmentation to CoP theory that allows us to make sense of instruction and assessment within a CoP.

The article is arranged as follows. First, I provide an account of my ethnography and the subsequent analysis of the data. Next, I provide a brief description of the field site. Then I offer a critical discussion of CoP theory which includes the augmentation needed in order to resolve the problematic conditions of instruction and assessment within CoP theory. After this, I describe the research field from the standpoint of CoP theory and then provide a series of vignettes derived from my ethnographic data which are discussed and analysed in turn by applying the critical and augmented CoP framework already established. Finally, I offer some conclusions regarding CoP theory, and reflections relating to the application and development of CoP theory more broadly.

An ethnography of workplace learning

The data on which this article rests comes from my ethnography of a large cycle shop, conducted between January and August 2022. Fieldwork involved going to the shop two or three times each week, on different days (including Saturdays) and at different times (when opening up, during the middle of the day, at closing time), moving around the building, writing field notes, taking photographs, transcribing brief moments of conversations and paraphrasing lengthier exchanges (I did not have permission to make audio recordings), collecting documents and – primarily – observing the practices of the workshop and the relations between the workshop and the other areas of the premises – the storage spaces, the office, and the retail space (Banks, 2007; Walford, 2009a). Each visit lasted between three and four hours. My research consisted of a 'traditional' single-sited ethnography, an immersive long-term study of the cultures and practices of the workshop that valorises the standpoints of the people who were working there, generating rich data in order to build a theoretically-generalisable account derived from the in-depth study of a single site (Atkinson, 2017; Troman et al, 2006; Walford, 2009b). I transcribed all of my field notes as soon as practicable after each observation. I loaded all of the field note transcripts, photographs and scanned images of paper documents into Atlas-Ti, my chosen computer application for data management (Tummons, 2014). The data set consists of transcribed observation notes ($n = 192$ hours), photographs ($n = 283$), and collected workplace artefacts such as administrative paperwork, leaflets, catalogues, and such like ($n = 33$). My analysis of the data involved: (i) reading/rereading hard copy field notes and writing memos; (ii) in vivo coding of transcripts of interview notes within Atlas-Ti, informed by my memos and other initial notes; (iii) in vivo coding of all other primary documents.

Obtaining informed consent required a period of negotiation from June to December 2021. An initial email to one of the two directors of the shop – who was also the original founder of the business – was followed by the provision of a document explaining my research interests which was discussed by the two directors before circulation to all of

the staff. I then attended a staff meeting at which I described my research to all of the employees, answered their questions and in one crucial matter responded to their concerns by agreeing not to make audio recordings, although everyone was happy for me to take photographs as well as make written field notes. After I left this meeting, the staff discussed my proposal. One week later I received email confirmation from the director/founder that they were all satisfied with my research proposal and agreed to take part. Importantly, this consent was only valid if *all* of the staff agreed to it – even if they were never going to actually be present in the workshop during one of my visits, which in fact turned out to be the case for two of the technicians, who I never met during the period of fieldwork (Nairn et al, 2020). I subsequently applied for and received all necessary ethical permissions from my departmental research ethics committee prior to commencing fieldwork (Delamont and Atkinson, 2018).

Welcome to The Bike Shop!

The Bike Shop (a pseudonym) is based in the North of England. It operates at three sites, although only the largest is the focus for the study. Established thirty years ago, it is run by two directors, one of whom founded the business as a sole trader. At the time of the research, they employed eighteen members of staff. The Bike Shop sells new bikes of all kinds and also offers servicing and repairs. Some staff are employed as technicians and others as retailers but the majority of the retail staff are capable of doing some workshop tasks, and the workshop staff in turn help with retail enquiries. The majority of staff have Cytech (Cycle Technician) qualifications. Cytech is a suite of competence-based qualifications for cycle technicians, launched in the UK some thirty years ago by the Association of Cycle Traders (ACT), the largest cycle trade body in the UK, and consists of a core theory module followed by three technical modules of increasing complexity. Similar to National Vocational Qualifications (NVQ) in the UK. Cytech was designed as a competence-based scheme for people working within the cycle trade although more recently a small number of private training providers have begun offering training linked to Cytech qualifications. It is not compulsory for cycle technicians in the UK to hold these or any other sector-specific qualifications. However, for a business to maintain registration with the ACT, it would have to employ at least one technician qualified to technical level two. As such, for these businesses, ACT membership and Cytech accreditation act as public-facing warrants of competence in just the same way that any other occupational certificate or qualification might do (Ecclestone, 2005).

Communities of Practice: critical perspectives

A *Community of Practice* (CoP) is a particular social formation, a clustering of people and material stuff in specific places. All of the members of any CoP are involved in the doing of a particular series of identifiable and defined practices, the doing of which has and will continue to require different kinds of learning. People will have to learn to do the things that the CoP is all about, how to use any required tools and resources, and how to talk/write about what they are doing in the manner appropriate to the things they are doing (Lave and Wenger, 1991; Wenger, 1998). Learning within a CoP is described as *Legitimate Peripheral Participation* (LPP). LPP is one example of those sociocultural as

opposed to psychological models of learning that share the social constructivism of Lev Vygotsky as a common antecedent (Illeris, 2007; Van der Veer, 2014). Examples of CoPs include tailors, midwives, naval quartermasters and butchers (Lave and Wenger, 1991), and workers in a medical insurance claims call centre (Wenger, 1998). Applications of CoP theory within the vocational and workplace learning sectors have included studies of bricklaying and automation apprentices (Felder, Duemmler and Caprani, 2021), learners in work-related programmes for the media industries (Thunqvist and Axelsson, 2012), hairdressing apprentices (Billett, 2007), modern apprentices in steel industries (Fuller and Unwin, 2003), engineering students (O'Connor, Peck, and Cafarella, 2015), the UK fire and rescue service (Brooks, Grugulis and Cook, 2020), and teachers of floor and wall tiling (Boud and Middleton, 2003). These studies demonstrate the ways in which CoP theory can, when used carefully and critically, inform rich descriptions of learning as a social practice within specific bounded contexts defined in terms of occupational and/or institutional context which is in turn a key element of my own research.

At the same time, different elements and/or limitations of CoP theory have been critiqued in different ways, and differing ways of resolving some of these have been considered (Barton and Tusting, 2005; Hughes, Jewson and Unwin, 2007). For example: Boud and Middleton (2003) used Basil Bernstein's concept of tightly and weakly framed curricula, to propose that CoPs might be considered as being either *tightly framed* in the case of workers whose practice is focussed around a specific body of work, or *weakly framed* in the case of workers whose practice is more varied and changeable. Billett (2007) foregrounded the agency and intentionality of individual learners within a CoP – aspects of participation that he argued have been given insufficient attention. In his studies of hairdressing apprentices, Billett observed that, notwithstanding the restrictions placed upon them by their proprietors/managers, apprentices continued to demonstrate forms of expertise and skill that they had brought with them from elsewhere. Other perceived deficiencies in the theory of LPP were explored by Fuller et al (2005) in their study of the workplace learning of apprentices who experienced different kinds of more-or-less structured apprenticeship programmes (see also Fuller and Unwin, 2003). Drawing on extensive empirical work, Fuller et al proposed an expansion of CoP theory in terms of how participation might be understood, argued that CoP theory focuses only on what a worker gets from a CoP and not on what a worker brings to a CoP, and (of particular relevance here) proposed that Lave and Wenger were overly dismissive of formal pedagogy.

By contrast, I propose that CoP theory can itself provide a solution to the problem of how to locate pedagogy within a CoP. Wenger (1998) sets out an unambiguous statement as to how the insights generated through the broader discussion of social learning within Communities of Practice might be applied to formal educational contexts (1998, 223–278), challenging head-on the refutations of formal pedagogy or instruction found within Lave and Wenger (1991, 99–100, 107–108), reconciling the application of a 'design for learning' (Wenger, 1998, 237) with the emergent nature of learning within a CoP. Wenger accomplishes this through the construct of the Learning Architecture (Tummons, 2022b; Wenger, 1998), a series of specifications from which a CoP can emerge (albeit in unpredictable ways). Amongst the specifications of a Learning Architecture, Wenger includes teachers and other educators who, within educational

encounters, need to 'represent their communities of practice in educational settings (…) being an active practitioner with an authentic form of participation might be one of the most deeply essential requirements for teaching' (1998, 276–277).

There are relatively few robust applications of CoP theory to vocational and workplace learning in comparison to other sectors, particularly higher education (Tight, 2015), and the application of CoP theory to assessment, let alone assessment of vocational and workplace learning, is yet more scarce. One example of particular relevance to my argument here is the work done by Torrance et al (2005). In their review of formative and summative assessment modes in vocational education and training, Torrance et al distinguished between CoPs relating to industrial practices, awarding bodies and so forth on the one hand; and CoPs of the local, geographically-situated communities of assessors, tutors, learners, and apprentices, on the other. Here, however, I draw on Rømer (2002) who suggested different aspects of theorising assessment within a CoP. Firstly, he posits assessment as showing knowledgeability in practice that has been gained/acquired over time, based on tacit and intuitively grasped criteria. And secondly, he argues that ways of knowing are necessarily multiple and complex, and stresses the multiple ways of knowing that learners/knowers occupy, necessitating similarly varied assessment processes.

A Community of Practice, therefore, is a sociocultural formation of people all engaged in more-or-less shared practices and within which learning is understood as Legitimate Peripheral Participation. CoPs are emergent but can be planned for through the establishment of a Learning Architecture, within which a pedagogical structure – including formal instruction – can be located. And within this, assessment can be understood as a heterogeneous process through which knowledgeability in practice can be made explicit.

The Bike Shop as a Community of Practice

Having provided a critical definition of what a CoP is and how instruction and assessment can be located within one, I now draw on my ethnographic data in addition to the CoP literature to describe The Bike Shop according to the characteristics of any CoP as outlined by Wenger (1998). Wenger (1998, 72–85) outlines three equal and inter-related dimensions of practice which are the paradigmatic elements of a CoP, and I discuss each of these in turn before moving on to describe the learning – through LPP – that is instantiated through the CoP.

First, there is *mutual engagement* which describes all the ways through which the CoP members interact with each other in the doing of whatever they need to do. In The Bike Shop, this refers to how the technicians – the members of the community – talk about their work and establish the ways in which their competence, experience and expertise are complementary or overlapping: asking for an opinion, checking the correct installation of a component, grumbling about a delayed delivery which means that a scheduled repair has to be postponed, querying an unfamiliar mechanical problem, and so forth.

Second, there is the *joint enterprise* which describes whatever it is that is the focus of the work done within the CoP. This encompasses the activities that take place within the workshop – building, repairing, servicing bikes and bike components. Like many joint enterprises, this equally rests on external drivers (the standards required by industry

partners and bodies to perform to required levels such as those set out in law by relevant British Standards) as well as internal drivers (the ethos and standards established amongst and between the Bike Shop staff – their commitment to, and philosophy of, cycling and relevant customer care).

Third, there is the *shared repertoire*. This consists of all the tools, procedures, materials, discourses and so forth that the technicians variously employ in their everyday work. As with any CoP, some of the shared repertoire is *indigenous* to the workshop (for example, the specific routinised operations used in assembling a factory-fresh cycle ready for a test ride that are reified within the build sheet checklist used by technicians) and some is *imported* into the workshop (for example, the list of operations for checking battery life on an e-bike, which has to follow particular manufacturers' specifications).

Within any CoP, learning happens through processes of engagement by which newcomers are afforded access to authentic elements of practice, facilitated by the longer-standing members of the CoP who act as teachers whilst themselves continuing to learn through their own ongoing participation. This learning involves the whole person: learning to use even a relatively simple tool such as a wheel-truing stand involves not only so-called physiological aspects (learning how to correctly mount the wheel, learning how to use a spoke key to apply tension to the spokes, learning how to adjust the measuring gauge that shows the technician the extent to which the wheel is true and round) but also so-called cognitive aspects (knowing that spoke tensions can vary, knowing that different brands of wheel rim will display mechanical stress in different ways, knowing that different spoke nipples require different spoke keys) – which from a situated learning perspective are all part of the same practice, indivisible from each other and all of equal value, importance, and necessity (Illeris, 2007; Lave and Wenger, 1991; Wenger, 1998).

Within a CoP, membership can follow any number of *trajectories* (Wenger, 1998). Thus, some people will arrive as technicians at The Bike Shop with only very limited prior experience/learning and will practice fundamental tasks such as rewiring gears and brakes, whilst others may already have garnered expertise and will quickly move on to more complex tasks such as servicing hub gears. Newcomers to the workshop will already have been and will still be members of other CoPs – this is described by Wenger (1998) as *multimembership* – and they will be able to carry their expertise and understanding with them: in some instances, it will be the case that entry to a CoP can only happen through mandatory prior membership of a related CoP (Lemke, 1997). Once in The Bike Shop, trajectories vary further as technicians follow particular specialist interests – one may focus on working with folding bikes, and another with e-bikes, one may specialise in wheel-building and another in servicing hydraulic forks. These different trajectories illustrate the variety that is found in any CoP, and the different practices that can therefore be learned.

This learning is subject to one of two modes of assessment. The first mode of assessment is the informal assessment that is entirely indigenous to the CoP – those ways by which the *authentic practices* of the community are recognised by those members of the community who occupy fuller and/or more central *trajectories* (Wenger, 1998). Following Rømer (2002) this can be defined as the way by which newcomers/apprentices within the CoP can show, and are required to show, to the CoP at large that they are doing things the right way; the ways in which the newcomers are required to demonstrate knowing

and competence to old-timers; and the ways in which complex and multiple ways of knowing might be expressed or displayed. At the same time it also echoes the importance of making explicit 'what people actually do' as proposed by Torrance et al (2005). I refer to this as informal only insofar as there is no reified structure (syllabus, formal pedagogy, certification, and so forth) attached to it.

The second mode of assessment is the formal assessment that is enfolded within and reified through the Cytech accreditation scheme already referred to. Cytech is therefore formal insofar as it carries with it a formal, externally-validated accreditation that generates a public statement of occupational competence through certification, the different methods used within Cytech reflecting the need for complex ways of knowing to be assessed through multiple means (Rømer 2002). In addition, Cytech illustrates the ways in which assessment in a specific CoP – such as The Bike Shop – is mediated by the influence of other, external CoPs such as industrial and/or accrediting bodies (Torrance et al, 2005).

Ethnographic encounters with learning, instruction, and assessment

Thus far, I have reflected on both the CoP literature and my ethnographic data set as a whole in order to establish the theoretical framework for the present discussion: to posit The Bike Shop as a CoP within which particular practices of learning, instruction and assessment can be described and made sense of. I now turn to a series of three vignettes, constructed from my field notes, to illustrate these practices at work. Such vignettes are a common feature of ethnographic writing and represent the reflexive and analytical stages of ethnographic writing that follow the transcription and analysis of fieldnotes, where paradigmatic events observed in the field are gathered together in order to illustrate and exemplify specific practices or actions of salience to the inquiry as a whole (Coles and Thomson, 2016; Jeffrey, 2018).

Vignette one: work experience. 18 February 2022 and 25–27 May 2022.

18 February. Sarah, the retail shop manager, is sketching out a timetable of activities for work experience placements for high-school students aged 15. The Bike Shop accepts three students at a time, for a fortnight, and have done so for several years. The Bike Shop takes their responsibilities for work experience placements very seriously: Sarah has drawn up a two-week schedule including retail-based activities and workshop-based activities. It's a significant commitment in terms of time and effort, but one still met with frustration by Sarah, who criticises the academic/vocational divide that frames the students' options for work experience: "why do we get the ones for whom doing something 'hands-on' is seen as the best and only outcome?"

25 May. Lloyd, the workshop manager, started his journey into the cycle trade aged fifteen, when he did work experience at a cycle shop near his secondary school. He left formal education the following year and started an apprenticeship at the same cycle shop, completing his Cytech qualifications alongside National Vocational Qualifications (NVQs). Today, he is working alongside one of the work experience students – Ben – and together they are fitting a set of lights to a customer's bike.

Ben: *does the light go on any particular side?*
Lloyd: *what side do you think it should go on?*

Ben: *don't know.*
Lloyd: *why did we put the reflector on the right-hand side of the bike?*

And Ben and Lloyd talk for a few minutes about why having the reflector on the right-hand side means that it indicates which side of the bike and rider is closest to the centre of the road.

Lloyd: [nods to indicate agreement] does that make sense to you?
Ben, wrestling with a tool, tells Lloyd that he is worried about breaking something as he fits the lights.
Lloyd: I break things all of the time! There's only one way to learn, isn't there?

27 May. Lloyd is "babysitting" (his word) two work experience students again for a second day – Ben has been joined by Michael – and together, they are preparing a new Marin bike for shop display. Lloyd is not having to do too much other than observe for now – "they are kind of teaching themselves" – and he tells me about his own trajectory from work experience to apprenticeship to workshop manager. He would like to be able to take on a "proper apprentice" of his own and has spoken to Sarah and to the two directors, but they are reluctant to agree: they are concerned that someone "too good" or "to bright" won't stay – as Lloyd says to me, it's a poorly paid job compared to being an electrician or a plumber: "you have to want to do the job for love, not money."

Lloyd's trajectory into and through the cycle trade has followed a typical apprenticeship route. From his first work experience to his current role as workshop manager responsible for, amongst other things, facilitating work experience visits, his learning has been situated within authentic contexts for practice – a series of cycle workshops – and then credentialed through completing the Cytech programme. Over time, through taking part in and being shown or instructed in different elements of cycle technicians' practice, he has learned (through LPP) as he has followed a trajectory across multiple CoPs (the different cycle shops he has worked in) before arriving at The Bike Shop. His direction of travel upon starting work at The Bike Shop, his *inbound trajectory* (Wenger, 1998), is characterised by having many new things to learn about this specific CoP – for example the routines that surround building a bike (discussed in vignette two, below) – but he will have brought with him his prior experiences, practices and things learned – an embodied expertise and understanding that is not straightforwardly transferable (sociocultural theories of learning reject notions of cognitive transfer), but instead is transportable, and which will be recontextualised within and mediated by the new CoP. Having completed Cytech, Lloyd is familiar with formal competence-based assessment (he still has 'a big folder of papers' somewhere at home) – but his learning has also been characterised by episodes of instruction and assessment, of being shown how to do something and then being expected to practice it in turn. Or, to put it another way, he has been assessed entirely informally, insofar as these episodes of assessment have been elements of the everyday practices of CoPs and not in and of themselves *necessarily* leading to formal accreditation. And, as is the case in any CoP, practice is necessarily sustained and perpetuated, with Lloyd in turn now showing work experience students how to do things, and asking questions to check their understanding, in the ways that he experienced as an apprentice.

Vignette two: learning on the job. 26 February 2022.

Rob is showing Alfie, a new member of staff, how to build a bike. When a bike arrives from the factory via the distributor, it is either boxed up or sleeved in cardboard, and is not yet fully assembled: handlebars have to be mounted, gears and brakes have to be set up correctly, wheels have to be trued, and so forth. Getting a bike from box to shop floor – ready for test-riding and then purchase – is referred to as "building a bike" at The Bike Shop. This is a process that is itemised in a detailed checklist – the 'Universal Buildsheet' – which guides the completion of the build item by item before being filed away when the bike is put on display. Rob and Alfie lean over the Buildsheet, heads almost touching, before turning back to the bike where Alfie, having pulled a set of allen keys from the tool wall, makes adjustments to the handlebar stem and brake levers. Rob watches for a moment and then turns to the bike in the adjacent workstand – an old bike in for a service. Rob splits his time between his repair, and between helping Alfie move through the checklist, sometimes answering questions, at other times selecting a tool and demonstrating a procedure.

Rob has worked at The Bike Shop for about two years, but has been in the trade for longer. He has his own workshop at home as well – one of the first times I met him, he was browsing online for tools for his home workshop – and has a lot of experience. But he does not have Cytech qualifications: he is not particularly interested in obtaining them; nor do the directors or the workshop manager think that he 'needs' them. He might, he told me, do them in the future, but he does not feel particularly compelled to do so. The only stipulation attached to doing Cytech would be that were he to want to do so, The Bike Shop would pay his examination fees, but he would then have to pay these back if he left within the subsequent twelve months.

One of the main functions of certification is to provide a public-facing warrant of competence and capacity in those physical and/or intellectual capacities that the certificate purports to record in a valid and reliable manner so that an acceptable threshold level of occupational performance can be ensured and/or so that future performance can be inferred (Eraut, 1994). A minimum number of employees are required to hold Cytech so that The Bike Shop can maintain trade accreditation with the Association of Cycle Traders (ACT) but there is no sense within The Bike Shop that holding Cytech renders you a 'better' or 'more competent' technician. Rob, as a relative newcomer to the CoP, is shown new (to him) techniques or processes by longer-standing members of the CoP, and he in turn shows techniques and processes to yet newer members of the community. But for Rob, his competence and capacity to work alongside the newcomers is derived from his expertise as it has been informally assessed within the CoP of The Bike Shop, not from his having been externally validated by Cytech. Indeed, as far as The Bike Shop is concerned, Rob's ongoing *insider trajectory* (the descriptor for an established CoP member who nonetheless still has more to learn through ever-fuller participation (Wenger, 1998)) is reliant on his practicing new and more specialist tasks such as wheelbuilding or frame repairs to the standards required within the CoP, but is not reliant on his gaining a Cytech certificate which he is not obligated to do unless he wants to for his own reasons. Rob's embodied, explicit and assumed levels of competence/expertise are commensurate with his position along his trajectory within the CoP, and certainly are seen as sufficient to allow him to train up Alfie the newcomer.

Vignette three: talking about Cytech. 26 January 2022.

Ed has worked at The Bike Shop for over twenty years and is one of the shop managers – he doesn't spend as much time in the workshop as he used to. After completing his school examinations when he was sixteen years old, he went to college but didn't enjoy being there, so he left after one year, and that's when he first started working at The Bike Shop. He already knew a bit about bikes, having spent lots of time "fettling them up and messing with them when I was a kid." He has completed the full Cytech programme (although the specifications have changed a little since he did them): three members of staff did their stage three at the same time, "so the Cytech guy came to us." For stage three, Ed – and his colleagues – had to choose three specialist topics, and he chose: Sturmey Archer hub gears; hydraulic brakes; and the suspension and rear frame assembly for Brompton folding bikes. But: the Brompton folding bike was not on the syllabus: Ed had to negotiate with the Cytech assessor to be allowed to do it, and he agreed, "even though I knew more about it than the Cytech guy – he'd never done that job." For Ed, since he 'had to do' Cytech, he might as well make it about something he would value – and at the time, he was the Brompton specialist within the workshop.

So how did the assessment work? "What the Cytech is looking for is an overall approach that shows what you are doing. Even if you made a mistake, the mistake wouldn't fail you if your overall performance was okay."

The somewhat ambiguous status of Cytech is again epitomised in Ed's experiences and recollections. Along with the other technicians, Ed agreed that within The Bike Shop having Cytech does not make, or even indicate that, you are a 'better' technician than someone without it, but he acknowledged the instrumental value of certification for the purposes of maintaining good standing with the ACT and also that knowing that the workforce is qualified provides reassurance for some customers. But any sense of an inherent value of the Cytech award, resting perhaps on the rigour of the assessment process or an intrinsic sense of satisfaction in completion, was absent. This is not to decry the Cytech programme as a whole. Wider research into the Cytech programme indicates a quality of provision at least as robust as anything delivered by awarding bodies. Nor is Ed's response to Cytech unique: it is not difficult to find examples from empirical research of instrumental attitudes towards assessment and certification within vocational and workplace learning, focused entirely on 'the piece of paper' (Ecclestone, 2005). The important issue here is in how Cytech is made sense of within the CoP of The Bike Shop by the members of that community: as a useful but by no means necessary process of accreditation, overlooked as an indicator of competence in favour of localised sense-making decisions within the CoP, valued as a public-facing warrant of competence for the purposes of trade accreditation but at the same time not seen as an essential developmental step or – from the standpoint of CoP theory – *paradigmatic milestone* that all members of the community have to pass by as they follow their trajectories within the community (Wenger, 1998).

Instruction and assessment within a Community of Practice

I now offer a series of conclusions regarding instruction and assessment within a CoP, mindful of the restricted scope of the empirical account presented (that is to say, recognising the situatedness of the empirical data as derived from a single-site ethnography) and therefore generalisable only in the sense of enriching extant accounts and offering additional theoretical contributions which is characteristic of ethnography of education

more generally (Alasuutari, 1995; Troman et al, 2006). These conclusions are presented in a linear fashion but are to be understood as interrelated, each nested within and reliant on the others.

Firstly, it is possible to locate a discourse of instruction within a CoP and as with any other form of discourse within a CoP, this should be understood as being a component of shared repertoire (Wenger, 1998). Within a CoP, members with greater expertise in relation to particular practices (often but not axiomatically longer-standing members) inform, demonstrate and explain to other members with lesser expertise in those practices (often but not axiomatically newcomers) how those same practices need to be accomplished. This might involve practicing – and therefore learning – a new mechanical/technical process, how to order workshop components online, how to use a hitherto unfamiliar piece of workshop equipment, how to install a particular cycle component, the name of a particular component, how to explain how to use a particular cycle accessory to an interested customer, and so forth. Any aspect of the joint enterprise of any CoP – in this instance, The Bike Shop – might be explained or taught through mutual engagement. It is in the authentic and situated expertise of the person giving instruction that the legitimacy of their pedagogical function resides (Wenger, 1998), notwithstanding the extent to which the 'instructor' in question defines themselves as such in occupational terms (Chan, 2012).

Secondly, it is possible to locate assessment within a CoP. Informal assessment can be seen as an aspect of the *shared repertoire* of the CoP (Wenger, 1998), another everyday element of practice through which the longer-standing members of the CoP evaluate, monitor and sense check the practices of relative newcomers (Rømer, 2002). Formal assessment can be made sense of as an example of how processes travel between CoPs – from The Bike Shop to the Cytech assessment centre, and vice versa (Torrance et al, 2005). The certificate is, like any other assessment certificate, a *reification* (Wenger, 1998), and if a technician looked for work elsewhere, then the certificate provides a conveniently transportable documented warrant of competence.

Thirdly, the authenticity and hence validity of assessment is mediated by the alignment of these assessment practices to the legitimate practice of the community. Authenticity and legitimacy are axiomatic elements of practice, and as such it follows that since all learning within a CoP happens through LPP, and LPP also axiomatically rests on authentic practice, then the validity of the assessment is to be found in the relationship or intersubjectivity between the assessor and the assessed as mediated firstly by their trajectory positions within the CoP and secondly by their embodied experience and expertise acquired through their *histories of participation* (Lave and Wenger, 1991; Wenger, 1998). In this way we can reconcile the tension between on the one hand a newcomer being assessed by a long-serving member in relation to established localised workshop practices, and on the other, a newcomer introducing a novel and/or innovative process that may require the assessment standpoint to be reversed (remembering that a dynamic of change is present within all CoPs). If accreditation is sought – through the completion of Cytech qualifications – then the observation and assessment of the bodies of knowing and expertise being learned will be evaluated by authentically-experienced and knowledgeable expert members of other CoPs (Torrance et al., 2005).

Some final comments: augmenting Communities of Practice theory

Not least as a consequence of Wenger's own ongoing adaptions (for example, the shift from the 'academic' to the 'practitioner' model of CoPs (Wenger, McDermott and Snyder, 2002: x)), CoP theory has over time been subject to more-or-less critical or informed application, often cited but not always explored in depth or detail. At the same time there is a smaller body of literature that has sought to work with CoP theory, to provide rich theoretical and empirical accounts of CoP theory and to explore and provide solutions and workarounds to some of the gaps within CoP theory (Chaiklin and Lave, 1996; Kirshner and Whitson, 1997; Wertsch, Del Río and Alvarez, 1995). CoP theory has been critiqued for lacking sufficient ways to account for gender (Callahan and Tomaszewski, 2007), different kinds of community participation (Billett, 1998), language use (Tusting, 2005), and manifestations of power (Fox, 2000; Fuller et al., 2005).

Mindful of the anthropological foundations of the two paradigmatic concepts of Legitimate Peripheral Participation and Communities of Practice, it seems to me entirely appropriate to use ethnography to explore and augment CoP theory and to use CoP theory to theorise the practices observed during my fieldwork. At the same time, it is important to remember that what we might term the elasticity of CoP theory has a limit: we would not wish CoP theory to be denatured either as a consequence of attempting to draw on additional theoretical components that lack an ontological or epistemological alignment to CoPs; nor would we wish CoP theory to be deleteriously affected as a consequence of misuse. But if we are willing to work with CoP theory alongside meaningful empirical inquiry, we can construct accounts of learning through social practice that are compatible with the concepts proposed by Lave and Wenger (1991) and Wenger (1998) whilst at the same time translating these concepts into different, where necessary more formalised, educational structures and cultures.

In this article, I have given a theoretically coherent and empirically informed account of both instruction and assessment within a specific Community of Practice, situated within my ethnographic research. I have demonstrated that both instruction and assessment – considered antithetical to a CoP by Lave and Wenger (1991) – can in fact be positioned with a CoP through the critical application of key theoretical tenets from Wenger (1998) and also from Rømer (2002) and Torrance et al (2005). In this way I have demonstrated how subsequent CoP-informed research can augment the use and application of CoP theory but also how a close reading of Wenger's original work can resolve some of the more trenchant critiques of CoP theory that have persisted over recent years. Other theoretical perspectives such as activity theory, actor-network theory and Bernsteinian and Foucauldian sociologies have been posited as ways of addressing perceived weaknesses in CoP theory (Barton and Hamilton, 2005; Boud and Middleton, 2003; Fox, 2000; Fuller and Unwin, 2003) and this ongoing theoretical development is to be applauded; at the same time we should remain wary of trying to stretch CoP theory too far and to make it respond to issues or factors that it was never intended to address (Farnsworth, Kleanthous and Wenger-Trayner, 2016; Tight, 2015).

If we are to use CoP theory to generate meaningful accounts of workplace learning, instruction and assessment, we need to generate rich descriptions that provide empirical

warrant alongside theoretically coherent and critical applications of the theory. One way to do this is to draw on Wenger (1998) more deeply; a second way is to make careful and critical use of subsequent research that likewise seeks to develop those areas of CoP theory that are relatively under-developed by Wenger (Barton and Tusting, 2005); and a third way is to acknowledge the centrality of rich – if not necessarily ethnographic – empirical data when doing so. In this way, we can construct accounts of learning, instruction and assessment within Communities of Practice that are entirely compatible with the theoretical tenets proposed by Wenger (1998) whilst at the same time translating these tenets into new, hitherto unexplored locations of both formal and/or informal educational structures and cultures.

Disclosure statement

No potential conflict of interest was reported by the author(s).

ORCID

Jonathan Tummons http://orcid.org/0000-0002-1372-3799

References

Alasuutari, P. 1995. *Researching Culture: Qualitative Method and Cultural Studies*. London: Sage.
Atkinson, P. 2017. *For Ethnography*. London: Sage.
Banks, M. 2007. *Using Visual Data in Qualitative Research*. London: Sage.
Barton, D., and M. Hamilton. 2005. "Literacy, Reification, and the Dynamics of Social Interaction." In *Beyond Communities of Practice: Language, Power and Social Context*, edited by D. Barton and K. Tusting, 14–35. Cambridge: Cambridge University Press.
Barton, D., and K. Tusting, Eds. 2005. *Beyond Communities of Practice: Language, Power and Social Context*. Cambridge: Cambridge University Press.
Billett, S. 1998. "Ontogeny and participation in communities of practice: a socio-cognitive view of adult development." *Studies in the Education of Adults* 30 (1): 21–34. https://doi.org/10.1080/02660830.1998.11730670.
Billett, S. 2007. "Including the missing subject: placing the personal within the community." In *Communities of Practice: Critical Perspectives*, edited by J. Hughes, N. Jewson, and L. Unwin, 55–67. London: Routledge.
Boud, D., and H. Middleton. 2003. "Learning from others at work: communities of practice and informal learning." *Journal of Workplace Learning* 15 (5): 194–202. https://doi.org/10.1108/13665620310483895.
Brooks, J., I. Grugulis, and H. Cook. 2020. "Rethinking Situated Learning: Participation and Communities of Practice in the UK Fire and Rescue Service." *Work, Employment and Society* 34 (6): 1045–1061. https://doi.org/10.1177/0950017020913225.
Callahan, J., and L. Tomaszewski. 2007. "Navigating the good ol' boys club: women, marginality, and communities of practice in a military non-profit organization." *Studies in Continuing Education* 29 (3): 259–276. https://doi.org/10.1080/01580370701403324.
Chaiklin, S., and J. Lave, eds. 1996. *Understanding practice: Perspectives on activity and context*. Cambridge: Cambridge University Press.
Chan, S. 2012. "Perspectives of New Trades Tutors: Boundary Crossing Between Vocational Identities." *Asia-Pacific Journal of Teacher Education* 40 (4): 409–421.
Coles, R., and P. Thomson. 2016. "Beyond Records and Representations: Inbetween Writing in Educational Ethnography." *Ethnography and Education* 11 (3): 253–266. https://doi.org/10.1080/17457823.2015.1085324.

Delamont, S., and P. Atkinson. 2018. "The Ethics of Ethnography." In *The Sage Handbook of Qualitative Research Ethics*, edited by R. Iphofen and M. Tolich, 119–132. London: Sage.
Ecclestone, K. 2005. *Understanding Assessment and Qualifications in Post-compulsory Education and Training*. 2nd ed. London: NIACE.
Eraut, M. 1994. *Developing Professional Knowledge and Competence*. Abingdon: RoutledgeFalmer.
Farnsworth, V., I. Kleanthous, and E. Wenger-Trayner. 2016. "Communities of Practice as a Social Theory of Learning: a Conversation with Etienne Wenger." *British Journal of Educational Studies* 64 (2): 139–160. https://doi.org/10.1080/00071005.2015.1133799.
Felder, A., K. Duemmler, and I. Caprani. 2021. "Restrictive and Expansive Participation in Companies' Activities: A Case Study of Bricklaying and Automation Technology Apprentices in Switzerland." *Journal of Education and Work* 34 (1): 53–66. https://doi.org/10.1080/13639080.2020.1858231.
Fox, S. 2000. "Communities of Practice, Foucault and Actor-Network Therory." *Journal of Management Studies* 37 (6): 853–868. https://doi.org/10.1111/1467-6486.00207.
Fuller, A., H. Hodkinson, P. Hodkinson, and L. Unwin. 2005. "Learning as Peripheral Participation in Communities of Practice: A Re-Assessment of Key Concepts in Workplace Learning." *British Educational Research Journal* 31 (1): 49–68. https://doi.org/10.1080/0141192052000310029.
Fuller, A., and L. Unwin. 2003. "Learning as Apprentices in the Contemporary UK Workplace: Creating and Managing Expansive and Restrictive Participation." *Journal of Education and Work* 16 (4): 407–426. https://doi.org/10.1080/1363908032000093012.
Hughes, J., N. Jewson, and L. Unwin, Eds. 2007. *Communities of Practice: Critical Perspectives*. London: Routledge.
Illeris, K. 2007. *How We Learn: Learning and Non-learning in School and Beyond*. London: Routledge.
Jeffrey, B. 2018. "Ethnographic Writing." In *The Wiley Handbook of Ethnography of Education*, edited by D. Beach, C. Bagley, and S. Marques da Silva, 113–134. Hoboken: Wiley Blackwell.
Kirshner, D., and J. Whitson, Eds. 1997. *Situated Cognition: Social, Semiotic and Psychological Perspectives*. London: Lawrence Erlbaum Associates.
Lave, J., and E. Wenger. 1991. *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.
Lemke, J. 1997. "Cognition, Context and Learning: A Social Semiotic Perspective." In *Situated Cognition: Social, Semiotic and Psychological Perspectives*, edited by D. Kirshner and J. Whitson, 37–56. London: Lawrence Erlbaum.
Nairn, K., C. R. Showden, J. Sligo, K. R. Matthews, and J. Kidman. 2020. "Consent Requires a Relationship: Rethinking Group Consent and its Timing in Ethnographic Research." *International Journal of Social Research Methodology* 23 (6): 719–731. https://doi.org/10.1080/13645579.2020.1760562.
O'Connor, K., F. Peck, and J. Cafarella. 2015. "Struggling for Legitimacy: Trajectories of Membership and Naturalization in the Sorting Out of Engineering Students." *Mind, Culture, and Activity* 22 (2): 168–183. https://doi.org/10.1080/10749039.2015.1025146.
Rømer, T. A. 2002. "Situated Learning and Assessment." *Assessment & Evaluation in Higher Education* 27 (3): 233–241. https://doi.org/10.1080/02602930220138598.
Thunqvist, D., and B. Axelsson. 2012. ""Now It's Not School, It's For Real!": Negotiated Participation in Media Vocational Training." *Mind, Culture, and Activity* 19 (1): 29–50. https://doi.org/10.1080/10749039.2011.632048.
Tight, M. 2015. "Theory Application in Higher Education Research: The Case of Communities of Practice." *European Journal of Higher Education* 5 (2): 111–126.
Torrance, H., H. Colley, D. Garratt, J. Jarvis, H. Piper, K. Ecclestone, and D. James. 2005. *The Impact of Different Modes of Assessment on Achievement and Progress in the Learning and Skills Sector*. London: Learning and Skills Research Centre.
Troman, G., T. Gordon, B. Jeffrey, and G. Walford. 2006. "Editorial." *Ethnography and Education* 1 (1): 1–2. https://doi.org/10.1080/17457820500512671.

Tummons, J. 2014. "Using Software for Qualitative Data Analysis: Research Outside Paradigmatic Boundaries." In *Big Data? Qualitative Approaches to Digital Research*, edited by M. Hand and S. Hillyard, 155–177. Bingley: Emerald Group Publishing Limited.

Tummons, J. 2022a. "Knowledge, Expertise, Craft, and Practice: Becoming and Being a Cycle Technician." *Journal of Vocational Education and Training. ifirst*. https://www.tandfonline.com/doi/full/10.1080/13636820.2022.2132527.

Tummons, J. 2022b. *Exploring Communities of Practice in Further and Adult Education: Apprenticeship, Expertise and Belonging*. London: Routledge.

Tummons, J. 2023a. ""I've Got a Mountain of Paperwork to do!" Literacies and Texts in a Cycle Technicians' Workshop." *Journal of Education and Work* 36 (5): 381–392. https://doi.org/10.1080/13639080.2023.2226076.

Tummons, J. 2023b. "Theorising the Everyday Work of Cycle Mechanics." *Research in Post-Compulsory Education* 28 (2): 313–329. https://doi.org/10.1080/13596748.2023.2206712.

Tusting, K. 2005. "Language and Power in Communities of Practice." In *Beyond Communities of Practice: Language, Power and Social Context*, edited by D. Barton and K. Tusting, 36–54. Cambridge: Cambridge University Press.

Van Der Veer, R. 2014. *Lev Vygotsky*. London: Bloomsbury.

Walford, G. 2009a. "The Practice of Writing Ethnographic Fieldnotes." *Ethnography and Education* 4 (2): 117–130. https://doi.org/10.1080/17457820902972713.

Walford, G. 2009b. "For Ethnography." *Ethnography and Education* 4 (3): 271–282. https://doi.org/10.1080/17457820903170093.

Wenger, E. 1998. *Communities of Practice: Learning, Meaning and Identity*. Cambridge: Cambridge University Press.

Wenger, E., R. McDermott, and W. Snyder. 2002. *Cultivating Communities of Practice*. Boston: Harvard Business School Press.

Wertsch, J., P. Del Río, and A. Alvarez, Eds. 1995. *Sociocultural studies of mind*. Cambridge: Cambridge University Press.