Introduction

The current global economic downturn has put reform, added value and rigorous cost-benefit analysis firmly onto the Policing agenda (Cordner and Shain, 2011) following, for example, Peter Neyroud's (2011) Review of Police Leadership and Training. At the same time, many occupational groups are pursuing professionalisation (Evetts, 2003 in Gundhus, 2013), in a context described by Neyroud, as a 'long slow crisis' in policing (2013, p. 345). Moving away from in-house training, partnerships between Higher Education Institutions (HEIs) and non-HE (Higher Education) organisations are being envisaged. The aim is to 'deliver policing in an age of austerity', explicitly without overburdening the service with bureaucratic guidance (College of Policing, 2013a), promoting ethics, values and standards of integrity (College of Policing, 2013b, p.5).

For the College, evidence-based practice, explicitly developed in partnership with outside organisations such as HEIs, is central to this change. But how effective are such partnerships? Higher Education (HE) in particular has attracted criticism for its interest in accreditation rather than education (Paterson, 2011), as well as its exclusive practices (Heslop, 2011). The measurable impact of HE in police training is also debatable, particularly as regards actual performance (Paterson, op.cit). But its impact on attitudinal changes, including towards unethical or unprofessional behaviour, is significant (Telep, 2011). Questions certainly arise about boundaries, ethics and cultural differences between the worlds of and professional police training (cf. Stout, 2011; Home Office, 2011; White and Heslop, 2012; Gill, 2013). Yet, as Macvean and Cox (2012) suggest, the different cultures which emerge from training partnerships are promising, and academic and police partnerships promise a 'win-win' situation (Das, 2013). HEIs offer academic credibility to partners seeking accreditation of their provision, benefiting in turn from the development of a much-needed, wider client base. Engagement with local professional communities and a chance to learn from them is increasingly vital to HE, and is a key aspect of the relationship

for Fleming (2010). HE's own credibility is enhanced as a developer of accountable knowledge established through research (Neyroud, 2013).

Similarly, policing organisations stand to gain from the external recognition which partnership brings. Increasingly, in a demanding, marketised, professional world, police officers expect training to lead to a wider range of professional options inside and outside the organisation. This reflects the changing remit of the British police officer (Haythorne, 2007), and the democratic demands for greater professionalisation, accountability, and legitimacy (Marenin 2007; Caless and Tong, 2011). Adapting to this certainly means a move away from inadequate or even counterproductive performance evaluation practices for Gorby (2013), but ineffective 'frontloading' training techniques, some argue, must also give way to skills in problem-solving and decision-making, critical thinking, multi-tasking, collaboration and personal communication (Werth, 2011).

The question of how to develop such training is also evolving. For White and Heslop (2012) a conflict between formal and practical learning has driven change and questions the common-sense distinction between the two types of learning actually is. For example, UK policing needs standards which can be decided and implemented as a common benchmark for practice (Home Office, 2011). But, if such standards 'stand outside and above' professional performance in order to measure its value (Stanley and Stronach, 2011, p.2), the seemingly linear relationship between standards and practice is undermined. Hard-pressed officers, with insufficient time to reflect deeply on the content of their training, are likely to end up simply reproducing it (Karp and Stenmark, 2011). Standards, on these terms, may simply legitimize "surface" learning and fossilized or abstract representations of practice which ignore its necessarily evolving nature.

So, given the 'profound uncertainties' about the nature of action itself (Fenwick and Edwards (2011, p.721) on one hand, and the view that few professionals feel prepared by initial training for the unpredictability of their complex roles (Fenwick, 2012) on the other, a

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demand exists for training partnerships which can meet the challenge. But such partnerships must do more than simply 'retool' professionals according to behaviouristic assumptions about professional learning. Indeed, policing is rapidly expanding to include complex skills such as dealing with media scrutiny, navigating collaborative arrangements between forces, and a greater reflexive awareness of the pivotal role of professional development. The demand for more adaptable, reflective professional practices, identified long ago by Donald Schön (1991), is accelerating.

Our response to these issues is to examine the impact of our practice in the context of police Firearms Training. UK Firearms training, we feel, provides an interesting testbed for collaborative work between a HEI and Kent Police Training and Tactical Firearms Unit (TTFU), leading to a series of changes and the development of a theoretical framework and further collaboration. Before discussing these details of these developments, however, it is important to identify the role of Firearms training in the British policing landscape.

Context

Although UK officers have long used firearms (Waldron, 2007), formal training for the Instructors of Firearms Officers is relatively new, dating to the early 1970s. Early programmes were adapted from military training and developed independently of mainstream police training, concentrating on operational experiences and subsequent official responses, advances in equipment and legislative and policy changes. Trainee instructors demonstrated psychomotor skills in weapons and range supervision, and training methods were almost exclusively didactic in nature. Instructors' personal development, and any further or continued professional development, was likely to be coincidental.

When Kent became a national centre in the 1980s, the qualification obtained on a NFIC was not well regarded internally and unrecognised outside the organisation. In response, an approach was made to a local HEI, proposing the inclusion of elements of the nationally–recognised Certificate in Training in the Lifelong Learning Sector (CTLLS), with

associated academic credits, within the NFIC. This was the first such accreditation in the UK and remains the only NFIC, (now delivered by a number of UK forces), in which this programme is embedded. Indeed, two national requirements are now made of Firearms Instructors: firstly that the basic preparatory award is achieved prior to or during a NFIC, and secondly that the NFIC delivery team are all qualified with the Diploma level qualification (National Police Firearms Training Curriculum, 2013).

One reason for this is that Firearms officers are increasingly subject to public and internal scrutiny, a fact underlined by recent high-profile shooting incidents. Everyone implicated in the chain of events leading to a shooting is potentially accountable, including trainers, and so there is a growing demand, not just for operational Firearms skills, but increased awareness of the potential impact of such incidents in the public domain. Thus Firearms officers must demonstrate their legitimacy to the public and mark their distinction from a growing private security industry with its own concerns.

They also hold a unique but ambivalent place in the culture of UK policing. Although Firearms Instructors represent approximately only 0.2% of the police population (Leonard, 2013), their influence is significant in developing the actions and attitudes of Firearms officers and commanders. They are often seen as highly conservative by nature, representing an unfortunate necessity or a foreshadowing of future policing methods (Punch, 2010). In fact, the image of the Firearms Instructor as a black-garbed, macho martinet has become an unfortunate part of police mythology (cf. Collins, 1998). It influences their institutional and self-image, and is reinforced through video games and action films (e.g. Steiner, 2001; Gates 2012). Unsurprisingly, Instructors are often sceptical, even dismissive, about academics, their work and their world, an attitude which may reflect a wider 'socio-biological elitism' which, some argue, exists in police organisations who always already 'know best' (Karp and Stenmark, 2011, p. 10). Certainly, there is a common pragmatic conservatism in policing (Lauritz, Astrom, Nyman, and Klingvall, 2013) suggesting a conservative theory-practice dichotomy for Gundhus (2013). And yet Firearms Instructors

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are also proud of academic accomplishments and increasingly aware of the status they bring in the eyes of their peers. At best, this ambivalence reflects the scepticism of a 'practice-focused vocation' in policing (Paterson, 2011, p.288) and at worst a negative police culture where sexism, racism and cynicism are said to be common (Macvean and Cox, 2012). Our research only partly bears this out, and such assessments doubtless reflect an outside 'academic' gaze (cf. Heslop, 2011), but in the culture described here negative stereotypes and their effects are undeniably present.

The desire to expand Firearms training beyond the narrowly operational focus implied by such a culture led to the introduction of an extensive programme of pedagogical input within the NFIC programme. A particular need was identified in the view that informed professionals should be qualified to a level which would allow them to act and develop professionally. Training should exceed the technical demands of the Firearms Instructor's role and incorporate thinking skills and training techniques more associated with Higher Education than Continuing Professional Development.

To meet this challenge, rather than simply append trainer training to the existing course, the Certificate qualification was made integral to it. Rather than reinforce the academic / policing tension, input supports this by introducing theories of learning, assessment, planning and professionalism by cyclically reviewing and evaluating relevant tasks. Presentations, micro-teaching and systematic feedback are tested ultimately in a week-long live training exercise with volunteers from the armed services. This approach reflects the belief that useful tools for expanding the preferences of police learners are needed (Lauritz et al, 2013), demanding in turn a recognition of the essentially contested and contesting nature of learning (Barnett, 2013). Practically speaking, this meant developing critical thinking, increasing autonomy, encouraging problem solving and implementing a focus on implicating theory and practice in dynamic ways. Theory and practice learn from each other, moving beyond questions of assimilation, dissemination or

application and into the more challenging but necessary domains of decision-making, responsibility and expansive professional effectiveness.

Methodology

Our paper is based on a pilot study of seven trainee Firearms Instructors (FIs), followed through a training programme and into their subsequent roles. Our concern was to understand the ways in which partnership could respond to flexible training needs through its impact on trainees after the programme itself. Fleming (2010) suggests that deeper HE/ police research partnerships can counteract the 'ivory tower' image of research, and we wanted to provide an account which was 'strong in reality' (Adelman et al, 1980, pp. 59-60 cited in Bassey, 1999, p. 23). Qualitative, semi-structured interviews, we felt, were the best way of doing this, since in the first instance they recognised the interviewees' context by resembling the kind of reflective debriefing which our respondents systematically undertake in training. This would provide a credible format in which officers could discuss potentially sensitive issues, but we were looking for evidence of dynamic changes to learning environments, whose features are difficult to assess in a more quantitative way. Our research method had to reflect the way we were working, allowing the flexibility necessary to encourage emergent themes and follow them up where appropriate.

Given our interest in expansive learning, we were looking for evidence of such environments, and data were coded by linking together comments made in areas which reflect this focus. First, we looked for links between training and their other professional practices, since we wanted to see if NFIC training impact on wider professional practices. Responses related to pedagogical approaches to teaching/training were also analysed, especially when they showed any contributions to new training practices. As we were in interested in an environmental perspective, a third theme was the effects of the Firearms department culture(s) on practice. Our last area of interest concerned changes of

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selfhood/identity/attitude, personal professional development and transitions in practice which resulted from the changes we expected to see. These themes are brought together as three studies (names have been changed).

Paul

Paul is an experienced Firearms Officer whose professional practice is shared between armed response vehicle (ARV) operations and training Authorised Firearms Officers (AFOs). Post NFIC/CTLLS course, Paul was faced with a variety of challenges. These included the training of colleagues as part of their continuous professional development (CPD) on various refresher courses, as well as updates resulting from new national initiatives such as the single system of search introduced primarily for the 2012 Olympics in London. Initially, Paul shadowed experienced instructors but became increasingly frustrated by the mechanistic 'roll-on-roll-off' nature of these interventions and the lack of recognition of his newly-acquired skills. Like many AFOs undertaking the NFIC/CTLLS, Paul wanted to 'give back' to the Firearms community, but felt limited by the standardised nature of the materials and resources which were available (mostly presentations) .This standardisation was partly due to the requirements of regulatory bodies such as the National Policing Improvement Agency (NPIA), now College of Policing. But Paul also highlighted the bounded nature of training methods and the 'patter' adopted by peers, which he described as the 'shouty', 'cuddlies' and 'sit on the fence' tribes.

Paul described the context as a place where both ego and machismo were on show, and where the relationship with colleagues was often affected by the change of professional role from AFO to FI. Providing CPD was an 'awkward experience' at times, because of its restrictive quality assurance agenda and the teacher-learner power-relations: both tended to negatively influence the training environment in Paul's view. He yearned to impart his professional knowledge and experience and develop his own training approach as opposed to being a mere 'transmitter' of AFO practices. He saw himself belonging to a fourth tribe

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which was both 'honest' and 'developmental', and which seemed a more effective way to address not only the pedagogical but also the relational aspects of AFO learning. Yet, his efforts to create his own training style had been initially restricted by existing practices, which were anchored in his training unit. What is striking here is the disjunction between Paul as operative and Paul as trainer: a confident teacher on the course and in a previous role as a self-defence instructor, his recent LLL professionalisation appeared to have been treated as a narrowly instrumentalist process of accreditation by his own force. This denied him the opportunity to divert from what he described as a training 'script' and its process of reproduction.

Alex and John

Alex and John had been 'thrown in at the deep end' following their return from the NFIC/CTLLS. No mentors or observations had been allocated to support their initial training, although with hindsight, both instructors found this beneficial. It had enabled them to learn by 'thinking on their feet' and had given them the freedom to develop their own training approaches. As a result Alex and John were both able to design learning programmes which departed from what they described as 'gun-focused' courses. Both wanted to use approaches based in contextual learning, problem solving and the ability to 'make mistakes' in an 'open and fair' environment. Unsurprisingly, the concept of 'making mistakes' does not sit well within AFO teaching and learning, and concerns for safety often overrides experimentation with the subject matter. However, both FIs saw this as an attempt to legitimate inflexible didactic methods of training. Indeed, in their view, 'front-loaded' or 'endured' learning were not perceived as efficient and enabling learners to develop as AFOs. Delivering programmes which were 'realistic', 'challenging' and 'meaningful' was considered key to AFOs' professional development and gradually became adopted by other FIs within the department. Their operational credibility as AFOs, as well as positive observations and feedback from students had contributed to the espousal of such practices by colleagues and

thus a change in local teaching and learning culture. Alex and John believed their successful influence on training was partly due to the 'window of opportunity' they had initially taken, but also felt the NFIC/CTLLS which had provided them with a different perspective on education and training.

Steve, Alan, Ben and Jamie

Significantly, Steve, Alan, Ben and Jamie were based in the Police force which initiated the NFIC/CTLLS course, where four FIs took part in the study. They confirmed the impact of the course on their training approach, but also on the culture of their training department. Steve, Alan, Ben and Jamie were also enrolled on the Diploma-level extension of the CTLLS course. Significantly, all four FIs identified their Chief Firearms Instructor (CFI) as instrumental to the development of practice and department culture. It is perhaps worth noting that the CFI is himself currently completing a PhD, demonstrating a particular adherence to the practices and values of Higher Education.

The overall cohesion of the team was evident during individual interviews, and was particularly striking in its criticism of the 'old ways' of training. 'Being beasted' (the aggressive tactics traditionally used in Firearms training) was rejected in favour of a more developmental teaching and learning approach. A new vocabulary was also adopted, with words such as 'fair', 'open', 'honest' used to describe their training practice. Ben and Jamie supported the need for 'learner-centred' or 'active learning' approaches to training. Indeed, the four FIs strongly advocated the benefits of an externally-accredited teacher training qualification, not least because it recognised their strengths and skills beyond the police service. Faced with a controversial question around the issue of translation of the qualification within their practice, all FIs underlined the complementary nature of the course to own practice. For instance, while the 'standard' AFO training already included 'judgement' elements, both Alan and Ben stated that the trainer-training had reinforced the importance of questioning one's practice. The notion of reflective practice, which is firmly anchored in

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teacher training, was seen as a tool to expand 'brain-space' and as an integral part of developmental Firearms training.

Nevertheless, the concept of developmental teaching and learning did not go un-questioned. The Firearms unit is currently experiencing a shortage of recruits, linked to the lack of financial incentives, the perception of the role as high risk and high public exposure as well as the ageing of its present force. For Jamie, managerialist practices translated 'developmental' into 'inability to fail learners' in order to increase pass rates. 'Management', he felt, was utilising 'developmental' training as a means to attract and retain AFOs within the force with recruitment in mind, raising questions about the lack of rigour and potential danger of such approaches.

Discussion

The professional development undergone by our interviewees beyond their initial training confirms the view that Firearms training is a complex operation which cannot be reduced to a transmission model of learning: our respondents stressed this point and criticised practices which they saw as implying a 'transition' away from a 'patter' of content or a 'scripted' approach. Nonetheless, our interviewees' views cannot be abstracted from context. Although the learning benefits of such methods are recognised as limited, they are often based on 'input' and assessment of performance, and are therefore considered 'safer' for the organisation. As we have seen, AFOs are well aware that the 'smoking gun backwards' principles apply, and that any shot taken by an AFO can be systematically investigated and tracked back to initial and/or CPD training. The FI's accountability is thus tied to specific teaching and learning approaches, ultimately representing a potential challenge to other professional and epistemological views. In fact, the varying contexts, practices, language and conceptualisation play a key part in an 'ecology' of professional development whose nature is essentially dynamic (cf. Hodgson and Spours, 2009). Being "thrown into the deep end" reflected the importance of such a situated view of professional learning, but so did the desire, expressed by Paul, to 'develop' officers who were 'up and coming'.

Two implications seem to stand out. Firstly, in such an environment, professional values and practices cannot be simply imported from one context to another, since contexts and practices are both open to change. Professionals themselves must be able to both adapt to new situations and quickly develop understanding (Lauritz et al, 2013) rather than simply reproduce practice regardless of context. On the contrary, as new practices develop collaboratively in response to disparate training spaces and the personal experiences of individual professionals, effective learning is likely to have significant – if unpredictable - consequences beyond initial training. Individuals, but also cultures and even languages, interact to frame what is learnt and what is carried forward into practice. It was clear from our interviews that the language of firearms training, with its 'frontloading', 'refreshing' and 'debriefing' played a key role in maintaining cultures, suggesting that new terms could impact on this culture. Change is not restricted to language use, however, and our interviewees' successes suggest that new ways of being professional have an impact on the concrete contexts to which they contribute. The key skill for organisations, teams, trainers and learners lies in recognising this dynamic environment and making the most of the learning opportunities which it offers. A highly flexible management style is implied, and change from within can be an effective driver, recognising the potential of individuals and teams to contribute to organisational change.

Secondly, this ecology sheds light on the institutional aversion to risk which is so important to police training. There can be no doubting that policing has a duty to protect the public, property and itself: interviewees were keen to stress their regulatory role in guaranteeing high skill levels, kit drills, tactical training, first aid and so on before anything else. In the Firearms context, error in training is understandably seen as a problem to be rigorously avoided so that risk to the public must be systematically minimised: Paul mentioned how carrying the wrong type of knife for example is unacceptable practice. But it is also possible that, rather than reflect genuine risk, such aversion actually expresses the conservatism identified above in training contexts. Our discussions suggested that, at the

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level of training at least, error plays a key role in learning, and this role is not necessarily a dangerous one when it can be discussed and used for development. If error enables reflection about what is not currently done, then it helps develop the kind of flexible imagining and responsibility which effective professional practice on the ground requires, rather than pre-codified ways of doing things. In effect, narrow views of training risk reinforcing operational incompetence if they exclude practices which encourage the development of more complex skills. As Paul suggests, learning which fails to expand is 'claustrophobic' when spaces and artefacts combine to impose their 'script'.

This picture of relations of imposition raises other questions, however. At the very least, an us-and-them schema seems to accept a logic according to which bottom-up professionality claims the prestige of insider knowledge. This privileged knowledge is denied to the distant bodies claiming to govern it, setting up an unhelpful and inaccurate conflict of motives between management and staff. This simplification distorts a dynamic situation, underplaying the way in which the actors in a system of implementation need to be involved. Environments are expansive when they include the interpretations of their requirements, not simply their application. Even the requirements themselves must be open to change as events present them in a new light.

So, if practitioners wish to participate more fully in their own professionality, a more accurate and productive model needs to be developed. Like the College of Policing, above, Cordner and Shain (2011) argue that more effective, evidence-based training methods are now needed, but these should take into account the more complex attributes of professional practice which our respondents describe. For example, they highlighted not just the impact of subcultures on professional development, but also the ways in which they changed. "Novel solutions" are needed to issues, such as these, which globalisation brings to workplace learning (Kerosuo and Toiviainen 2011). Drawing from our own experience of the interface between our own work and that of our trainees, one of these 'novel solutions' may

be analysed in terms of the more or less 'expansive' learning environments which we aim to promote in Firearms training.

Expansive Learning Environments

The concept of Expansive Learning Environments (ELEs) in professional training has gained credence over recent years (c.f. Engeström, 1987; Cox, 2007; Fuller and Unwin, 2004; Kerosuo and Toiviainen, 2011; Warmington, 2004; *inter alia*). Against its critics, who see it as insufficiently radical and too compliant with management goals (e.g. Avis, 2009), expansive learning involves the learners in 'constructing and implementing a radically new, wider and more complex object and concept for their activity' (Engeström and Sannino, 2010, p.1). Learners are not subjected to training, but construct the objects of learning collectively in response to problematic situations. This expansion constantly crosses boundaries to create new relations and collective motives for change (Kerosuo and Toiviainen, op.cit) and seems to reflect our interviewees' desire to develop more effective training practices.

For example, our interviewees referred to the 2012 Olympic games in London and recent terrorist situations as events which demanded flexible practices from the different forces involved. Such problem–solving policing has traditionally focused on the wider implications of crime as a symptom rather than an individual event (Coldren et al, 2013), but problem-based *learning* complexifies things because its problems are always already new insofar as they are determined by its particular circumstances. Place, time and the physical objects it deals with all give it traction on the physical organisation, and problems are always created and re-defined by those concerned, including interest groups whose ends may diverge (Payne et al, 2013). Here, although learning only really has meaning in its own context, meaningful interaction between individuals and things as the objects of perception concretises learning through mediating objects. From documents and policies through to

hardware and equipment, these objects are central to ELEs as the material 'stuff' of practice which is defined, problematised and negotiated by the expanding network of parties involved: Paul could not overstress the way the Olympics were the "driving force" behind training and development.

However, although expansive learning is solutions-focused, it is situated in environments which themselves are open to growth, so objects of expansive learning can also be immaterial problems, goals, or solutions. This solutions-focused growth often takes place in the interface between different bodies or existing problems. In our case, client and training provider both sought to develop specific responses to specific problems of accountability, responsibility and professional practice. In principle, what is relevant to professionals on the ground is valued and promoted in interfaces between partners which encourage innovation and the sharing of the successful practices which emerge. Fenwick (2008, p.2) describes this relational view of professional learning as interdisciplinary, practice-based, socio-cultural, and system-oriented, reflecting our experiences of working and learning with Firearms Instructors. Here, learning is emergent and unpredictable; it is situated provisionally in networks of people, activity and technology; finally, it is not acquisitive but expansive. Learning environments which do not facilitate such expansion are judged 'restrictive' (cf. Fuller et al, 2004), and are characterised by isolated activity and obstructive working practices. Non-expansive learning tends to take place only at times of crisis and/ or by imposition, with organisations focusing on trivial and unproductive 'car park and toilet-type' issues rather than matters of teaching and learning (IfL, 2012).

Pragmatically speaking, expansive learning environments focus on the effectiveness of training in such settings, helping to indicate why the outcomes of learning in different settings might be more or less beneficial to employees (Cox, 2007, pp. 4-5). Three of their features can help understand how they do this.

Firstly, they involve the chance to engage with multiple and overlapping communities of practice inside and outside the workplace at the same time. Ideally, when expansive spaces are created, they allow new ideas to emerge through flexible, collaborative practices which, although closely tied to the workplace, maintain a porous relation with its outside so that new connections can emerge. Our interviewees suggested that this aspect was important, as the status of a professional community could either promote or stifle development, depending on the cultures or change agents involved. We heard many times how conflict occurred between forces around policing the Olympics, for example, and when Paul spoke of the 'claustrophobia' of the trainers' office spaces compared with his previous operational role, he was clearly regretting more than just the physical space available.

Secondly, in an ELE, jobs are organized to foster the co-productive development of knowledge and skills: they cannot be reduced to the sort of 'here and now' problem-oriented-policing which fails to provide the means to deal with longer-term issues (Gundhus, 2013). For example, training is not an add-on or a reflex reaction to a sudden pressure, so the common problem of unsatisfactory training slotted into the working day and providing inappropriate learning at the wrong time in the wrong place is, in theory, avoided. Work is organised instead around the demands of training, which itself is structured to facilitate the emergence of professional knowledge within, and especially between, different groups. This is why 'boundary-crossing' is integral to ELEs as unstable, heterogeneous, and polyvocal bodies (Kajamaa, 2011). For Kajamaa, instability allows adaptive change to significant events, heterogeneity encourages accountability for one another, and polyvocality allows novel solutions to problems to at least be heard.

Thirdly, the expansive organisation of work offers the chance to develop underpinning knowledge rather than, for example, acquire and repeat surface knowledge, leading to greater autonomy, responsibility and creativity (Fuller and Unwin, 2004). But it also requires that we understand the working-training environment itself differently, providing new and possibly conflictual indications about how such contexts might be fostered by an

organisation seeking to be more 'expansive'. Unwin, Felstead and Fuller (2008) argue that this contrasts with the unhelpfully abstract terms in which traditional organisational learning is seen:

> Once learning is viewed as a complex, contextualised process, we open
> the door to a much more meaningful exploration of how knowledge and
> skills are developed, adapted, transformed and shared within the dynamic
> setting of the workplace

Here, learning and work are organized to facilitate a symbiotic relationship, where learning cannot be expected to simply happen. An actively-promoted ELE can only benefit an organisation by facilitating both opportunities for learning and a cultural context which values and enables them in concrete ways. ELEs identify how these opportunities might be fostered through, for example, close collaborative working, mutual support and an explicit focus on the learning of teachers and trainers. This was perhaps the strongest message from our interviews: successful training and development happened in these more supportive environments.

Moreover, by stressing the collaborative and situated nature of professional development, we accept that learning cannot take place in a vacuum, and indeed that the space of professional practice is constructed around organisational need. And yet a fear of losing control echoes the concern mentioned above about the potentially problematic nature of organisations' need to avert risk. For Engeström (2006, p.1784) losing control is an inherent feature of the increasing complexity in workplace objects. Collaborative working is inseparable from the proliferation of 'runaway objects' and 'object-oriented activity' because objects in complex, shifting fields only exist indirectly and through mediation (Engeström and Escalante, 1996, pp. 361-362). Rather than assume that things are passive objects to be controlled, picked up, or transferred, organisations need to define them by what they do, where they do it, and what relations they enable. This is true whether they are material

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(equipment, policies, resources) or not (practices, language, 'windows of opportunity' and 'brain space'). Thus the pluralistic alternative of ELEs shifts away from the manipulation of complexity and onto questions of internal forces of development such as emergence and self-organisation more applicable to complex environments. These forces apply not only to the training context but also to the managerial level, where what is stipulated is also open to change, interpretation and the emergence of new practices. From this point of view, professionalism as an ecological phenomenon is necessarily endogenous, since it results from development and re-organisation at all levels. It is decentred or distributed, and does not just result from one person's (re)definition or just 'appear' in a context, but emerges synthetically from within networks of practitioners.

Returning to practice, we found a concrete echo of this in evidence that the 'centre' towards which the trainees were expected to evolve was itself far from fixed when viewed from the institutional viewpoint. Different organisations and their parts have different practices, of course, but crucially these themselves change as partnerships – around the Olympics for example - come into play through training, development and individual / team agency. Rather than draw novices into existing preconceptions, truly effective training should kick-start expansion, recognising that professionals are agents in their own contexts and beyond.

Our interviews also undermined the view of HEIs as havens of expertise, particularly in the critical, reflexive skills which some associate with them (Lee and Punch, 2004). Reflexion after the fact risks promoting only superficial change (Sykes and Dean, 2013), and critical reflectivity often risks facilitating a techno-instrumentalist view of education with 'no intention of altering itself or its practitioners' (Benade, 2012, p.337). Consequently, if HE practitioners are to contribute to partnership, our practice must be just as open to change as those of our partners. The problems of professional practice are more important than their solutions which, in any case, in no way exhaust their possibilities for creative development.

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