



Ethics-oriented Learning in Environmental Education Workplaces: An activity theory approach

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Abstract

In the context of increasing national and global environmental challenges and their implications for the working world, new ethics and practices are being introduced into workplaces that take better account of socio-ecological relations. Little is understood, however, about the nature of ethics-oriented workplace learning. Drawing on Cultural Historical Activity Theory (CHAT), which enables historically and contextually situated relational perspectives to emerge, this paper explores contradictions in the activity systems of two young environmental education learner-practitioners struggling to engage with the ethical dimensions of their professional work and the professional development course they are studying. The study focuses in particular on the environmental values and ethics component of their course – a year-long Learnership in Environmental Education, Training and Development Practices (EETDP). The paper reflects how tensions and contradictions within and between the interacting activity systems of the workplace, the course, and its regulating qualifications authority influence the teaching and learning of the environmental ethics component of the course. Ethics-oriented teaching and learning processes are found to be strongly influenced by the ‘rules’ and ‘mediating tools’ of these interacting systems, but these are often at odds with the ethical perspectives, socio-cultural context and skills of the ‘subject’ and ‘community’. These systemic contradictions can be more fully understood when their cultural and historical origins are made explicit. The analytical process has led to a more nuanced understanding of ethics-oriented teaching and learning in a workplace-based course, and has revealed several areas needing more careful research (particularly the area of environmental discourses) and the explicit and implicit language of ethics.

Introduction

Using a third generation Cultural Historical Activity Theory (CHAT) framework (after Engeström, 2001), this paper examines how contradictions within and between interacting activity systems influence learning processes of the ethics component of an environmental education course. Contradictions, the ‘historically accumulating structural tensions within and between activity systems’ (Engeström, 2001:137), are seen as having generative potential, as being the drivers of learning, change and development in activity systems. It is through identifying and grappling with contradictions that transformation is mediated; when, according to Engeström (2001:137), ‘the object and motive of the activity are reconceptualised to embrace a radically wider horizon of possibilities than in the previous mode of the activity’. This study works backwards from that aspiration to find new and better ways of working in

change-oriented, workplace learning settings. It recognises that for expansive transformation to occur, the systemic contradictions must first be identified and described, because such scrutiny might generate new visions and opportunities for change-oriented learning. This paper shares empirical work in progress conducted under the auspices of the Rhodes University/South African Qualifications Authority (SAQA) research programme into change-oriented learning and sustainability practices (Lotz-Sisitka, 2008), and in so doing, contributes to an emergent body of research that focuses on work and learning, a new focus for SAQA research.

The primary unit of analysis is the activity system of two learner-practitioners engaging with the ethical dimensions of environmental education practice. The term 'learner-practitioner' is used to denote the integrated nature of their identities and practices simultaneously as 'learners' doing a course and as 'practitioners' in a professional workplace. Various tensions and contradictions related to ethics-oriented learning occur in this activity system, but, as shall be shown later, most are traceable to more systemic contradictions between this and the other activity systems with which it interacts. The interacting activity systems are: (1) the National Certificate in Environmental Education, Training and Development Practices (EETDP), which is a 12-month professional development course (a learnership) offered by a non-governmental environmental organisation (NGO) in South Africa; (2) the Wetlands Conservation Project¹ (WCP), where the two learner-practitioners are placed for the duration of the EETDP course; and (3) the South African Qualifications Authority (SAQA) and the National Qualifications Framework (NQF) within which the EETDP course curriculum was developed and is currently being offered.

This paper reflects on how tensions and contradictions between the interacting activity systems of the workplace, the course, and its regulating authority influence the teaching and learning of the environmental ethics component of the course.

Sustainability Practices and Changing Work Ethics

Through international and national policy initiatives and rising public concern, organisations (including those providing and creating work) are slowly realising the need for change towards a more sustainable way of living amongst people and within planetary limitations. New ethics and practices are being introduced into workplaces that take better account of socio-ecological relations. Various new sustainability practices which reflect a new work ethic at play are being introduced. These include practices such as environmental impact assessment, sustainable agriculture, energy conservation, water resource management, pollution control, environmental education, design and use of new (green) technologies and energy systems, cleaner production, biodiversity conservation, improved social conditions in the workplace, design of new economic models (e.g. green taxes), and waste recycling (Lotz-Sisitka, 2008). These sustainability practices are permeating workplaces everywhere and introduce a change-oriented learning environment, at the heart of which lies the creation of a new work ethic.

Modern work ethics and practices were originally constituted through the expansion of industrialisation, colonialism and capitalism. In this process, the modernist 'work ethic' purposefully separated workers from wider concerns in the world, including socio-ecological

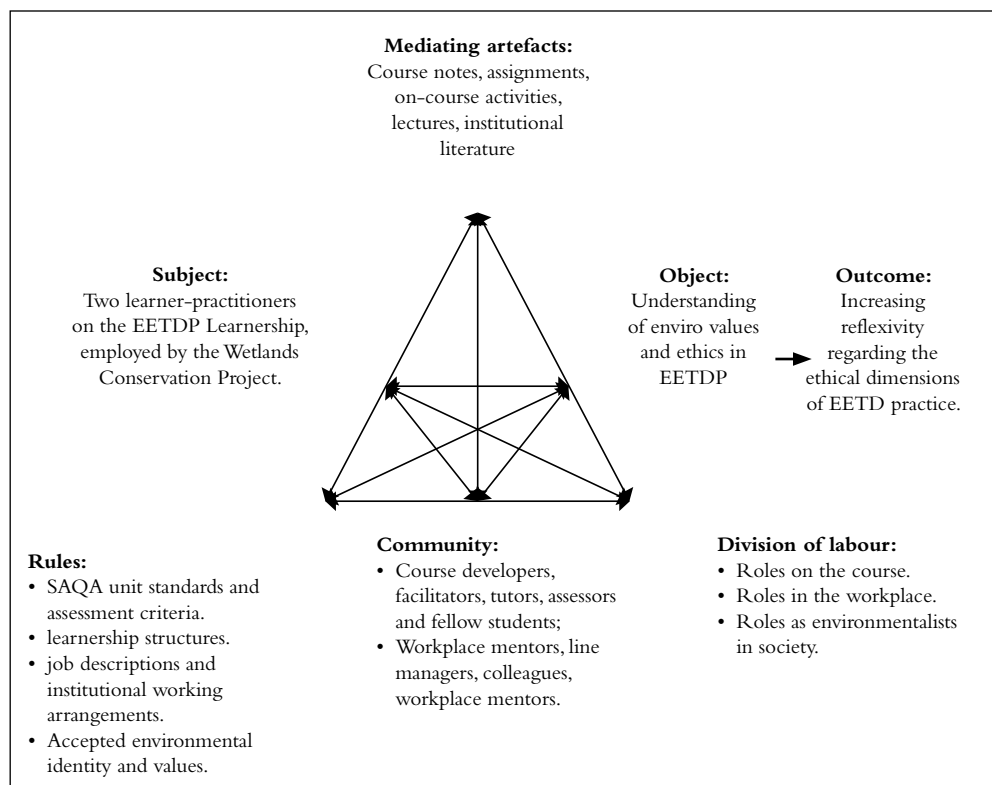
relations (Bauman, 1998). Today these development approaches are marred by unsustainable practices such as the production of pollution and waste and economic activities that appear to be allowing inequalities to thrive despite unprecedented economic growth and development. Such concerns are fundamental to all sectors of South African society. They are thus central to most education and training processes because they are both the bearers of culturally and historically situated values *and* the potential catalysts of ethically situated action and socio-ecological change. Environmental education processes imply an ethic of caring for the planet and recognising and acting upon areas where responsible human decision-making is required.

However, the nature of ethics-oriented learning remains poorly understood. Observations and experiences in environmental education in South and southern Africa suggest that the values associated with environmental practices are commonly taken for granted, under-examined or contradictory. Furthermore, course curricula, themselves values-based and conceptually laden, introduce adult learners to new discourses which may be taken up superficially or iconically, sometimes at odds with the deeply embedded history, culture and practices of the learner, and with the less deeply embedded but equally influential history, culture and practices of their workplaces.

Methodology: Third Generation CHAT

CHAT emerged from Lev Vygotsky's work in the 1920s and 1930s on the cultural mediation of actions. His renowned mediational triangle (Vygotsky, 1978) showed how a child's action in relation to an object or motive was mediated by culturally inscribed tools (language, concepts and material artefacts). This first generation of activity theory was advanced by Leont'ev (1978) who described how individual action is not only culturally mediated but also 'always situated in the context of a historically developed collective praxis, an activity system' (Virkkunen & Kuutti, 2000). This was articulated by Engeström, Miettinen & Punamäki (1999) as 'second generation activity theory' (Figure 1) which shows how individual meaning-making and action can only be understood in relation to its socio-cultural context, and how society is in turn acted upon and transformed by individual agency. CHAT's holistic view of learning and action thus disrupts the Cartesian divide between individual and society through its proposition that 'mind is revealed in action on the world' (Edwards, 2005:53), while its dialectical unit of analysis 'allows for an embodied mind, itself an aspect of the material world, stretching across social and material environments' (Roth & Lee, 2007:189).

Figure 1. Second generation CHAT ‘activity triangle’ commonly used by activity theorists to analyse human activity systems (Engeström, 1987). Here, the activity system is exemplified using the environmental values and ethics component of the National Certificate in EETDP.

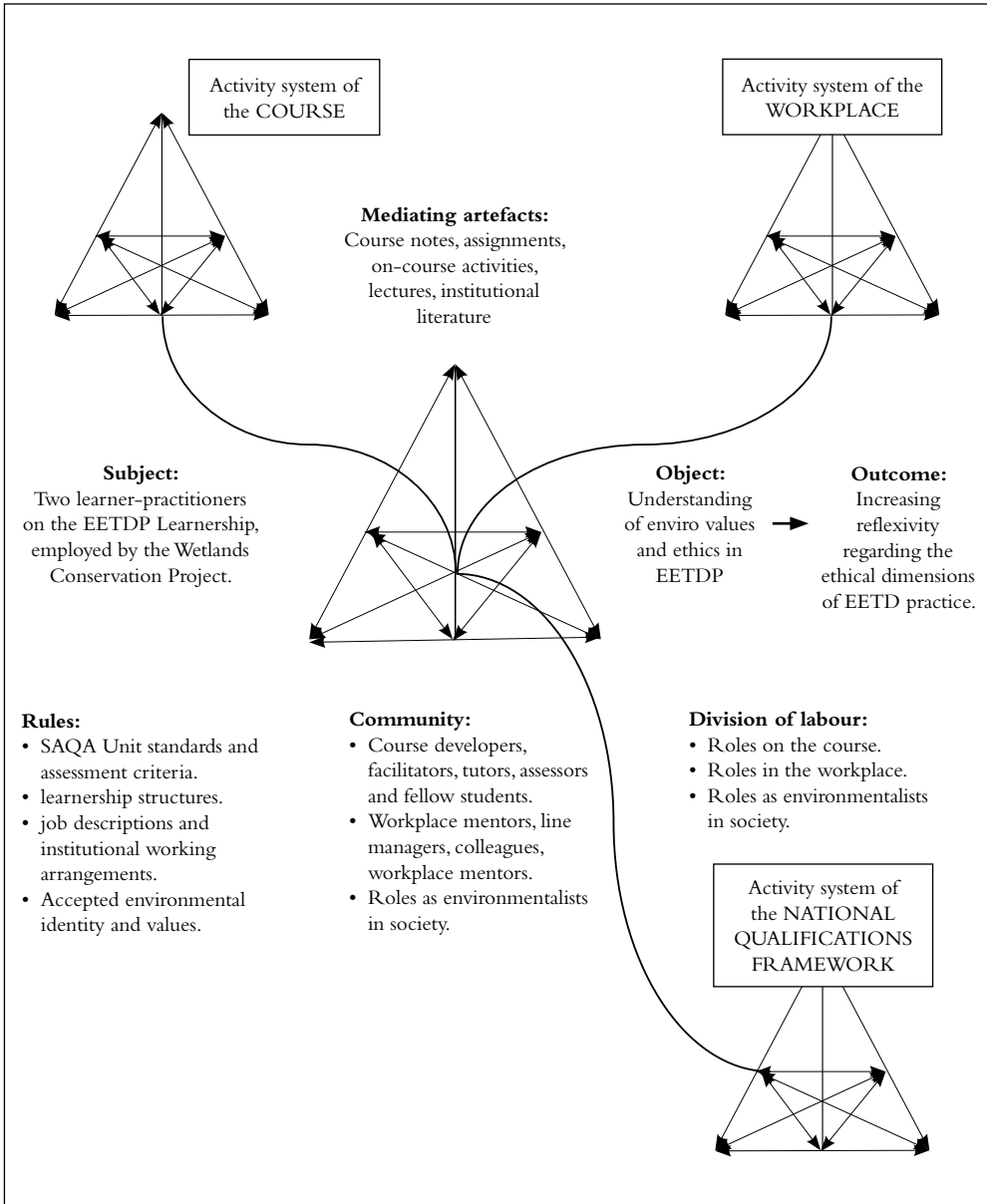


Engeström’s subsequent development of third generation CHAT and expansive learning makes its transformative potential more explicit. Where Vygotsky’s and Leont’ev’s emphasis lay on understanding play and learning among children, more recent work by Engeström (1987, 2000, 2001) and others (see for example: Chaiklin, Hedegaard & Jensen, 1999; Engeström *et al.*, 1999; Virkkunen & Kuutti, 2000; Warmington *et al.*; 2004; Roth & Lee, 2007; Edwards, 2007; Mukute, 2009) explore the implications of the Vygotskian legacy for organisational and workplace theorising.

Third generation CHAT foregrounds the networked and interactive nature of activity systems. Engeström (2001:136) identifies the prime unit of analysis as a ‘collective, artefact-mediated and object-oriented activity system, seen in its network relations to other activity systems’. This paper takes as its prime unit of analysis the activity system of two young, black, male learner-practitioners engaging with the ethical dimensions of their environmental education practice within a nature conservation agency. It examines how their activities and progress towards achieving their objectives are bound up in networked interactions with other activity systems, namely: (1) the national qualifications authority and its associated frameworks

and regulations; (2) the environmental education course; and (3) the conservation workplace where the learners are placed for the duration of the course (see Figure 2).

Figure 2. Third generation CHAT ‘activity triangle’ representing how activity systems occur in relation to other networked activity systems (Engeström, 2001). In this case, the activity system of learner-practitioners engaging with the ethics-oriented dimensions of their work interacts strongly with those of the course, the workplace and the National Qualifications Framework.



Identifying Contradictions Within and Between Activity Systems

Contradictions are ‘fundamental tensions and misalignments in the structure that typically manifest themselves as problems, ruptures, and breakdowns in the functioning of the activity system’ (Virkkunen & Kuutti, 2000:302), and these give rise to disturbances which Engeström (2000:964) calls ‘deviations from standard scripts’. Contradictions are recognised as the main drivers of learning and change because actors respond to the disturbances; for instance, course facilitators might change their pedagogy or develop new meditational tools in response to learners’ poor performance. But Virkkunen and Kuutti (2000) caution that an accumulation of contradictions can lead to a loss of direction in the activity system and the production of even more disturbances and ruptures. This paradoxically creates the need for, but simultaneously reduces the prospect of, more learning and change. Seeking an understanding of how to achieve a balance of contradictions sufficient to catalyse learning and change without compromising the activity system’s overall focus and value is a primary concern of this paper. Especially in change-oriented learning processes (and this paper focuses on ethics-oriented teaching and learning as one example), careful, open-ended interactions are needed to create spaces for deliberation and change. Wals (2009:43) explains:

Moving towards sustainability or sustainable living, inevitably involves diverging norms, values, interests and constructions of reality. A key premise of social learning is that such differences need to be explicated rather than concealed. By explicating and deconstructing the oftentimes diverging norms, values, interests and constructions of reality people bring to a sustainability challenge, it not only becomes possible to analyse and understand their roots and their persistence, but also to begin a collaborative change process in which shared meanings and joint actions emerge.

Engeström (1987) identifies four types of contradictions:² (1) those occurring within the elements of an activity system (e.g. within the rules of an activity system); (2) those occurring between the elements (e.g. a contradiction between a rule and the division of labour of an activity system); (3) those occurring between the old and new way of doing things (assuming that expansive learning and transformation within the activity system occurs); and (4) between separate activity systems (e.g. the activity system of a course and that of a workplace).

CHAT provides an analytical vantage point and a language to probe such tensions and contradictions, particularly in understanding how the histories and cultures of the various groups have jointly given rise to the current status quo. The activity system under review is thus not seen as a static snapshot, but as a dynamic, historically-constituted process.

The activity systems

The following sections describe the activity systems of the qualifications authority, the course and the workplace before providing a more detailed account of some of the contradictions identified in those systems. These insights are based on workplace observations, document analysis and extensive interviews.

The activity system of SAQA and the NQF

The South African Qualifications Authority Act (RSA, 1995) and the NQF influenced the origination of unit standards – specific outcomes and assessment criteria around which the EETD course curriculum was developed, and in relation to which learner-practitioners' engagement with environmental ethics is assessed. Through its various structures and mechanisms – such as the Education, Training and Development Practices Sector Education and Training Authority (ETDP SETA) – SAQA had responsibility for regulating and quality assuring curriculum design and the assessment of learning, a function which made it influential in all accredited education and training in the country.

The object of the SAQA/NQF activity system is strongly influenced by South Africa's history of inequity and racial discrimination, and by its legislated intention to contribute to post-apartheid education system transformation. In line with the SAQA Act of 1995 (since superseded by the NQF Act No. 67 of 2008 [RSA, 2008]), the objective of the NQF is to create a cohesive national framework for education and training that facilitates articulation and progression within career paths, that enhances the quality of education and training, and that accelerates the redress of apartheid's legacy of an inequitable, discriminatory education, training and employment system (SAQA, 2006). The mediating tools and artefacts of this activity system (for example unit standards, specific outcomes, assessment criteria, embedded knowledge, assessment frameworks, guiding documents, strategies, and so on that were in place at the time of this research) exist for the realisation of these objectives. The 'community' of the SAQA/NQF activity system is extensive, including, for example, the national Department of Education (DoE), the Department of Labour (DoL) (since superseded by the Department of Higher Education and Training), the standards generating bodies (SGBs), sector education and training authorities (SETAs), learners, and accredited education and training providers (such as the Wildlife and Environment Society of South Africa [WESSA] whose activity system in relation to the course is described below). A while ago the study team on the implementation of the NQF (DoE & DoL, 2002) noted, however, that the size, composition, nature and capacity of these numerous groups, and the complexity of their relationships, was hindering NQF progress.

Walters and Isaacs's (2009:25) account of the failings of the NQF reveals several disruptions and contradictions within the activity system of the NQF. They state the following:

Key amongst external factors was an underestimation of the weaknesses of institutions and the lack of competent educators and trainers inherited from Apartheid. Key amongst the internal factors were conceptual confusions and contestations over what was meant by competences and outcomes (and forms of learning underpinning their achievement) and how they might be best described in qualification statements and used for quality assurance. Central to both sets of factors was a lack of clarity about the purposes of the NQF with stakeholders having very different perspectives and objectives ranging from the state's perspective of an administratively driven quality management system that could steer the education and training system towards its economic and political objectives to organised labour's view of the NQF as a portal to lifelong learning with strong emancipatory and empowering objectives.

From a vantage point provided by CHAT, one can identify in the above statement disruptions between the 'object' of the activity system and its 'community' and the numerous other activity systems with which it interacts ('weaknesses of institutions and the lack of competent educators and trainers'). These disruptions can be traced to systemic contradictions, in this case historically derived through the Apartheid legacy. Also evident are disruptions between the NQF activity system's own 'mediating tools' and its 'community' in the form of 'conceptual confusions and contestations' which, as we shall discuss later, has significant implications for the 'rules' and 'mediating tools' of other interacting activity systems. Finally, they allude to disruptions between the 'rules' of the NQF activity system, and its 'subject, 'object' and 'community' ('a lack of clarity about the purposes of the NQF with stakeholders'). These and the preceding disruptions may arise from the more complex systemic contradictions in the overall conceptualisation of the NQF associated with conflicting neo-liberal economic and democratic agendas (Allais, 2003).

Environmental ethics within the activity system of the EETDP course

Aspects of the complexity of the SAQA/NQF activity system outlined above manifested in the curriculum development process of the National Certificate Course in EETDP, as experienced by WESSA and other role-players. In late 2003, WESSA prompted the establishment of the Environmental Learning Forum (ELF)³ to enable more cooperative responses to environmental education and training opportunities arising out of the NQF, and to function as the interface between ELF member providers, the relevant SETAs, and employers seeking environmental education and training. The forum's founding document notes that:

... the current engagement with the NQF and accredited education and training by the environmental community is limited and ad hoc. The reasons for this are many and include the complex bureaucracy and administrative burden surrounding the accreditation process, the fact that many environmental organisations are small NGOs and CBOs. (ELF, 2004:3)

Between 2003 and 2006, the needs analysis, collaborative curriculum development, course accreditation and pilot implementation of the National Certificate Course in EETDP were characterised by conflicting advice and directives provided by SETAs, private consultants and members of the environmental education community who had some prior experience with the NQF.

The 'rules' regulating the course's activity system are mostly derived directly from the SAQA/NQF activity system. For example, the qualification is offered in the form of a year-long learnership and is registered as a 121-credit course at Level 5 on the NQF. Similar to the apprenticeship model, the South African 'learnership' model inducts adult learners into a particular type of work through a curriculum that is required to be 70% workplace-based and 30% formal instruction. As all qualifications through the NQF are unit standards-based,⁴ the curricula of learnerships are more formalised than the traditional apprenticeship model of learning, having more formally constituted assessment requirements and delineated course-based and workplace-based components. Learners are placed in relevant workplaces for the

duration of the course where they compile a highly structured ‘portfolio of evidence’ of their learning, supported by an appointed course tutor and workplace mentor.

The stated purpose of the qualification is to:

... prepare candidates to function as entry-level environmental education practitioners. It will apply in particular to part-time practitioners working in environmental education centres and to people who may be employed primarily in fields other than education, but who may develop an environmental education role in their workplace, e.g. field rangers, outreach officers, interpretive officers, etc. (SAQA, 2005b).

One of the qualification’s ten exit-level outcomes requires learners to: ‘Apply fundamental knowledge of environmental ethics to a field of work or study.’ The content, scope and depth of this broad outcome is determined by four unit standards, each with a particular emphasis or application. Table 1 lists the qualification’s four ethics-oriented unit standards and their credit value; while Table 2 provides the detail of one of these unit standard’s Specific Outcomes (SO) and Assessment Criteria (AC).

Table 1. Ethics-oriented unit standards within the National Certificate: EETDP

Unit standard title	Credits
13668: Work ethically and professionally as an environmental education practitioner	3
13649: Apply fundamental knowledge of environmental ethics to a field of work or study	6
13640: Research and analyse an environmental issue in terms of principles of environmental justice and sustainability and recommend possible solutions	8
8367: Understand and develop conservation ethics	4

Course developers, facilitators, tutors, learner-practitioners, mentors and assessors agree (albeit citing different reasons) that the environmental ethics dimension of the course is very challenging, to the point of being problematic. Ethics-related questions in the assignments were simply left blank by many learners, course facilitators and tutors expressed uncertainty around the pedagogy associated with the ethics component of the course, and assessors expressed concern about their own competence to assess others’ ethical engagement, and whether ethics can be assessed at all.

Due to the structure of the learnership, 70% of learning is required to take place in the workplace. The assumption in the course curriculum was that time spent on the ethics component of the course during contact tutorials (30%) would be extended and enriched by 70% through workplace mentorship and experience. In practice, however, the formal teaching time dedicated to environmental ethics and values was reduced and as explained below, little or no elaboration occurred in the workplace.

Table 2. Detail of unit standard 13649, including specific outcomes and assessment criteria

Unit standard 13649: Apply fundamental knowledge of environmental ethics to a field of work or study	
Specific outcome (SO)	Assessment criteria (AC)
SO 1: Demonstrate fundamental knowledge and understanding of environmental ethics	AC 1: Demonstrate broad knowledge and understanding of key concepts related to environmental ethics. AC 2: Demonstrate some depth of understanding of different perspectives in environmental ethics and associated value positions. AC 3: Demonstrate an understanding of the practical implications of the contested and ambivalent nature of environmental values
SO 2: Analyse a range of environmental practices and problems and develop a synthesis	AC 1: Analyse a range of environmental and development practices in the light of a fundamental knowledge of environmental ethics. AC 2: Analyse a range of environmental problems in the light of a fundamental knowledge of environmental ethics. AC 3: Describe the variety of environmental value positions held by stakeholders associated with these environmental practices and problems. AC 4: Summarise and describe the ethical dilemmas reflected in the scenarios analysed. AC 5: Recommend ethically responsible alternatives or solutions to these practices and problems.
SO 3: Demonstrate an understanding of the environmental value positions	AC 1: Demonstrate knowledge of key international and South African environmental policies and legislation that have a bearing on the learner's field of work or study. AC 2: Where relevant, demonstrate knowledge of workplace-based environmental policies and procedures. AC 3: Analyse selected policies and procedures and identify environmental value positions reflected in these. AC 4: Compare the environmental value positions reflected in environmental policies and procedures.
SO 4: Develop a code of environmental ethics guiding practice within the field of work or study	AC 1: Describe the learner's current or future work context. AC 2: Identify responsibilities, procedures or practices that may have an impact on the environment. AC 3: Identify characteristics of environmental best practice in the field. AC 4: Draw up a code of environmental ethics to guide workplace practice. AC 5: Critically evaluate own performance against these criteria.

Environmental ethics within the activity system of the workplace

The Wetlands Conservation Project (WCP) is a long-term, donor-funded project within a national environmental NGO. Its focus is on capacity development with key stakeholder groups to achieve the rehabilitation and wise use of wetland systems, training, community management, lobbying and government cooperation. As part of its strategy to build capacity of young, black conservation leaders within the project and the sector more broadly within the transformation objectives in South Africa, the WCP trialled an internship programme

to mentor young black professionals in wetland conservation practices. Initially, the WCP appointed degreed young professionals, but in two consecutive cases lost them to better paying jobs once they had accumulated reasonable work experience with the WCP. Thereafter, the project appointed two young, unqualified and inexperienced interns in a part-time capacity with the goal of supporting them to develop their capacity and careers within the project. The candidates were, prior to their appointment, working mostly in a volunteer capacity for two small, local NGOs. They were identified by a senior colleague and selected on the grounds of their potential to develop successful careers within the EETDP or conservation sector. In the absence of a structured internship programme, it was decided to register the two new interns for the National Certificate Course in EETDP and to use that course's curriculum process to direct their workplace learning processes. The WCP employs only two other full time staff (both young white males who have each worked for the WCP for nearly a decade) at the level of project manager. They were both assigned to the two part-time interns as their workplace mentors.

The main focus of the WCP is to work with stakeholders (e.g. farmers and other landowners) to delineate, conserve or rehabilitate wetlands and related freshwater systems. When asked in an interview to describe the ethical orientation inherent in their work, one of the project managers explained:

Fundamentally, as a programme, our primary and perhaps unwritten motivation is working with people to manage their wetlands better. We don't come to people saying listen, we're the wetland experts, we've got the answers. We kind of ask what is the problem that we have here, and we share our take on the problem and how do we now solve this problem, how do we work together on it? ... It's not our job to really push a particular set of environmental values because people create their own value systems, their own ethical systems.

The same project manager, who is also the workplace mentor to one of the learner-practitioners, recognises that he and the WCP bring a specific set of environmental values, but it is not his place to dictate or otherwise impose such values on those with whom he works, such as farmers, foresters, and the learner-practitioner to whom he is assigned as workplace mentor.

Both the learner-practitioners and the project managers struggled to identify sites of ethical tension in their work with the WCP. One of the project managers referred to the tension between their organisation's environmental values and national government's legal and policy frameworks regarding freshwater management. One learner-practitioner referred to the tensions between rural communities who traditionally cut reeds and graze their cattle in wetlands and conservationists who aim to protect wetlands from degradation.

But due to the nature of their work (e.g. project managers accustomed to working alone on specific projects, many of which require sophisticated reporting and knowledge specialisation) and the nature of workplace interactions (e.g. interactions were reduced to weekly management meetings, in the absence of other common work), there were minimal opportunities to engage directly with such environmental values and ethics-based concerns. Environmental values and

ethics appear to be under-examined and taken-for-granted in the workplace practices of the WCP, whereas professional ethics such as honesty in the workplace, transparency, openness between colleagues, punctuality and so on appear to be much more explicitly framed and discussed.

Consequently, both workplace mentors reported very little evidence of either learner-practitioner having engaged actively with the ethical aspects of their professional work during the learnership. Additionally, the learner-practitioners appeared to rely almost exclusively on tutor and assessor feedback to guide their responses in the ethics-related workplace assignment tasks.

This does not mean that no opportunities existed for such interactions, nor that ethical deliberation did not occur. It is, however, an indication that dialogue and other forms of learningful interaction around environmental values and ethics in professional practice were sparse in the workplace, despite it being integral to the course content and assessment framework which seems to have assumed that EETDP workplaces would provide such opportunities.

Guided by this section's emphasis on historicity and structure, the following section reviews a range of contradictions within and between activity systems as the two learner-practitioners engage with the ethical dimensions of their work.

Identification of contradictions

Contradiction 1: The scope and complexity of the qualification's unit standards, outcomes, assessment criteria and essential embedded knowledge [RULES] exceed the scope and depth of the stated purpose of the qualification [RULE] and are untenable in relation to the credit-weighting of some unit standards [RULE].

This first contradiction is what Engeström (1987) describes as a level one contradiction, occurring *within* the same element of an activity system. In this case, there is a mismatch between the qualification's stated purpose and the requirements and credit weighting of its unit standards.

This is illustrated through the case of Unit Standard 8367 ('Understand and develop conservation ethics') (SAQA, 2001). The unit standard is worth four credits (of the qualification's overall 121) which equates to a recommended 40 notional hours, 70% of which should be workplace-based. The unit standard contains of five specific outcomes: (1) Identify values, situations and behaviours which have caused global environmental crises; (2) Develop a personal set of extrinsic and intrinsic values of ecosystems; (3) Distinguish differing interests and values underlying current practices in 'Conservation'; (4) Interact with people to address issues of conflict of a bioregional context; and (5) Explain differing interests and values underlying local environmental conflict.

Over and above the achievement of these specific outcomes, learners must be assessed in terms of the unit standard's essential embedded knowledge (EEK)⁵ which is listed as follows:

The qualifying learner is able to demonstrate a basic knowledge and understanding of:	
1. Broad ethics	10. Emotion and science
2. A 'value'	11. Principle of sufficiency
3. Empathetic skills	12. Conflict management.
4. Risk and decision-taking	13. Conservation and preservation philosophy
5. Parallel thinking	14. Sustainability (some practical intergenerational examples)
6. African and western approaches to conservation	15. Bio and cultural diversity issues
7. Wilderness (extrinsic, intrinsic)	16. Negotiation skills
8. Man-Earth-God relationships (spirituality values)	17. Feminism (eco)
9. Politico-ethics (capitalistic-socialistic – green and brown issues)	

This EETDP qualification was developed to: 'prepare candidates to function as entry-level environmental education practitioners' (SAQA, 2005) and the only learning assumed to be in place is a Grade 12 school-leaving certificate. The scope and complexity of the specific outcomes and essential embedded knowledge listed above is incongruous with the stated purpose and starting point of the qualification.

Additionally, the amount of time required to support entry-level practitioners (who have little or no background in environmentalism or philosophy) to achieve the listed specific outcomes and EEKs within the study time associated with four credits, is unrealistic.

This disjuncture between various 'rules' within the SAQA/NQF activity system is traceable to an earlier contradiction in 2001 between the rules and community of that same system. In the formative years of the NQF, standards generating bodies (SGBs) were formed. These consisted of specialists from various fields commissioned to develop qualifications and their associated unit standards. The unit standards for the National Certificate in EETDP were developed by the Environmental Education SGB. However, after the SGB had finalised the qualification, the qualification was amended internally within SAQA to provide specific credit bearing electives (which the SGB thought would be the choice of providers), so that the qualification adhered to a certain number of credits. It was amended to include Unit Standards 8367 ('Understand and develop conservation ethics') and 8385 ('Facilitate conservation understanding'), both of which originated in the Nature Conservation SGB and disrupted the coherence of the ethics-oriented unit standards already in place in the education qualification.

It becomes possible to trace how various occurrences in the historical emergence of the unit standards within the SAQA/NQF activity system determined the nature of the 'rules' that currently direct the activity system of the EETDP course and consequently influence the form and quality of the learner-practitioners' experiences of workplace learning. Contradictions that exist between the activity system of the course and the design of standards therefore need to be brought to the fore and critically engaged with to ensure a stronger and more effective

relationship between these two activity systems. To date, education and training providers have not been adequately empowered to fully understand the historicity of the issues they are dealing with, and thus consequently continue to make more efforts to work with the unit standards in the qualification, rather than requesting a revision or review of the originating problem. If learning is to be more successful, then these contradictions need to be raised and addressed, and education and training providers need to be more fully empowered to understand and critically engage with the construction of the standards that shape their practice.

Contradiction 2: The course's written materials and assessment tasks [MEDIATING TOOLS] are experienced by some learners [SUBJECT] as inaccessible, even alienating.

There is ample evidence to suggest that both learner-practitioners in this case study engage actively with the ethical dimensions of their personal lives and feel strongly about certain socio-ecological issues. For example, the older and more experienced of the two is actively involved in local initiatives supporting orphans and vulnerable children living on the streets, while the younger has recently become involved with a 'dog school' initiative which offers free training in dog care and handling to schoolboys and their dogs in the local township.

The learner-practitioners, however, appear to lack the shared language skills and cultural capital to, firstly, bridge the course materials with their own experiences and, secondly, articulate this within the specifications of the course's assessment framework and tasks, as articulated and expected in and through the course and its discourse and language. Both learner-practitioners can engage well in informal conversations in English, as well as with a number of accessible English texts such as newspapers and magazines. However, interactions involving more advanced field-based discourse and more complex sentence construction appear to disrupt the fluency of their responses. The following is an extract from one learner-practitioner's ethics-oriented assignment response, illustrating challenges associated with articulating sophisticated ideas in an additional language:

I would say sustainable development is a process where we have to look after what we have for the next generation, in order to survive. And I can also say it is a demanded thing by the environmental issues which gives us a challenge to Act. (Student Portfolio of Evidence, p.11)

Both of the workplace mentors (who are proficient in the discourse of the field, and in English as their first language) expressed concern over the learner-practitioners' levels of literacy, noting that they were unable to write professional reports at the required level or engage constructively with most written texts used in the professional context of the workplace. This is an issue reported on more widely in the environmental sector (DEA, 2010), and is an issue that has been discussed in great depth by sociologists such as Bourdieu and Passeron (1977) and Bernstein (2000) (amongst others), who explain the cultural power of language and its exclusions in educational settings.

The EETDP course materials reflect little sensitivity to learners' language proficiency, and to issues of access to new professionalised discourses, as evidenced in the following two extracts from the student handbooks:

Humanity has been steadily broadening its ethical obligations from members of the same race, to a nation, to the whole of humanity. However we have also seen a steady rise of other concerns since 1960 with rise of animal rights and now we even include inanimate objects (sea, rocks, rivers) into this broadening ethical boundary. (WESSA SustainEd, 2006/2009a, p.35)

and...

The relatively new philosophy of environmental pragmatism has its foundation in the American pragmatism, which was developed at the end of the 19th century. The main thought of environmental pragmatism lies in the importance of the environment, as it provides humans with experience, which facilitates in developing modifying and changing ethics and values as time goes by. Understanding that it is impossible of finding [sic] one ethic that will completely and accurately solve all conflicts of right and wrong is pragmatism's lead word.

The environment is seen as an important source in the search for a mixture of ethics that will, not solve, but ease many of the problems in the world today. Attempts to dominate nature are, according to environmental pragmatism, not recommendable, as this will annihilate parts of nature that might have served as sources of experience to humans. The exclusion of any environmental ethic (anthropocentrism, eco-centrism, bio-centrism) is also not supported by this philosophy since denying one ethic for another might prevent us from reaching a good value system that can relieve [sic] some of our life's burdens. (WESSA SustainEd, 2006/2009b Appendix 2)

Different explanations for the complexity of the course text and mediation languages have been put forward by the community of the course's activity system. Some suggest that it is traceable to the course developer during the course's inception who was finalising a postgraduate degree in environmental education at the time of drafting the materials for the pilot phase of the course. Others suggest that it is not so much the academic intensity of one individual, but rather the general paucity of philosophically and pedagogically robust environmental ethics texts across the course's community of practice that necessitated such a heavy reliance on postgraduate-level texts. The course has, however, been offered six times since its inception and, although time and resources for reviewing and rewriting of materials has been limited, certain revisions have been made. However, these revisions have not extended to the complex texts of the ethics component of the course. Again various reasons exist for this, most notably the tight controls placed on the course designers by the sector education and training authority who use 'tick box' approaches to quality assurance.

It was not only at the linguistic and professional language level that the course's mediating tools were experienced as uninviting. Discourses typical of environmental ethics typologies and philosophy textbooks dominate the course manuals. As noted above in Contradiction 1, their dominance is traceable to the rules regulating the activity system of the EETDP course.

This exploration of a second contradiction enables a tracing of the consequences of those national prescriptions through to the experiences of a learner-practitioner engaging with ethics discourse from his own starting point. When one learner-practitioner was asked if he had encountered these terms before, or had found them useful in the course, he responded:

I have not encountered them before and they just don't exist in my lifestyle and in my language. ... [W]hen we want to segregate someone from a discussion, so then you can use these words. Eco-centrism! [laughs]. And then people start to say 'I don't belong here', you know, whereas we need collective effort in terms of alleviating what we are doing on our environment and relating it to what the environment does to us.... I can only use these words to meet the requirement of the qualification, but not really at my workplace or at my professional life ... Because our communities don't need these words. They only need action that would save their lives. (Interview with anonymous participant)

From this quotation it is evident that the learner has a clear and nuanced understanding of the development needs of the disadvantaged community where he lives, as well as the power gradients that affect how role-players engage with such processes. His response also shows sophisticated understandings of ethical issues, and while he does not appear to fully grasp the technical ethical discourses as presented in the course, he astutely recognises that he needs to use these typologies and terms in his assignments if he is to be assessed as 'competent' against the relevant unit standards.

The second learner-practitioner noted that he found the course materials interesting and helpful, but also acknowledged that he struggled to complete the readings because the vocabulary was difficult and the texts were long. Beyond such comments in an interview, however, it is difficult to gauge the extent of the readings' usefulness to him because he did not refer to them at all in his responses to the ethics-oriented assignment tasks.

The value of being able to identify and probe this contradiction between the mediating tools and subject of the activity system is that it begins to reveal other existing or potential contradictions. For example, as noted earlier, ethics-oriented interactions in the workplace were sparse, with few if any written texts in circulation. Consequently, almost all tools to mediate ethics-oriented learning were accessed via the formal course teaching sessions and materials. An area for review or change towards better supporting workplace learning processes through a learnership might be to provide more accessible, contextually adaptable course materials that form a more explicit bridge between course content and the dynamics, practices and languages of the workplace, bearing in mind that new professional discourses may also need to be learned in the workplaces. It is not, therefore, simply a matter of simplifying language, but rather a matter of mediating professional discourses more effectively through different iterative teaching and learning strategies.

Conclusion

While only two contradictions have been elaborated upon in this paper, numerous other contradictions can be identified, such as: a contradiction between the ‘community’ and ‘mediating tools’ of an activity system, reflected in uneven understandings of environmental values and ethics by course developers, tutors, assessors, workplace mentors and learners, and their limited experience and guidance on how to teach and assess the ethics-oriented component of the course.

This paper has focused in detail on two systemic contradictions that influence the quality of ethics-oriented teaching and learning on the EETDP course. The first was a level one contradiction occurring within the same element of an activity system (in this case, the activity system of SAQA and the NQF), which has implications for effective practice in the related activity systems of the course and learner. The second was a level three contradiction occurring between the mediating tools of the course (language and discourse), and the mediating tools (language and experiences) of the two learner-practitioners registered for an EETDP learnership and placed in the activity system of a wetlands conservation workplace. Cultural historical activity theory has provided an analytical vantage point to probe these contradictions further, in particular to understand how the histories and cultures of the various groups have jointly given rise to the current status quo.

A shortcoming of writing a paper focused on systemic contradictions is that the emphasis lies on (and lays bare) tensions, disruptions and problematic areas which are not balanced here with the strengths, synergies and successes of the EETDP course – of which there are also many. This special focus on the ethics component of the course has forced the creation of a reflective space in relation to it, and this is potentially generative, particularly if the openings provided by the analysis of the contradictions and tensions provide the course designers with tools and insights to improve the learning opportunities for the learner practitioners. The course developers may want to pursue this methodology to review other components of the course, such as how environmental issues are framed in the course, how educational theories are being taught, and so on.

The wider benefit of these analytical tools is the generative potential that their sharpened analysis provides. At the start of this paper it was noted that contradictions are potentially the drivers of learning, change and development in activity systems. Through CHAT and the identification of systemic contradictions, the researcher has been able to probe the ethics-oriented learning processes of the EETDP course in more depth. There is evidence of how the historical development of ‘rules’ and ‘mediating tools’ in interacting activity systems influences ethics-oriented teaching and learning in the present. Misalignment between various rules that direct ethics-oriented learning, together with diverse discourses around environmental values and ethics in the course and the workplace activity systems, have created numerous anomalies and tensions, which are openings for new engagement and learning. The process has led to a more nuanced understanding of ethics-oriented teaching and learning processes in a workplace-based course, and has revealed several areas needing more careful research, especially in the area of environmental discourses, and the explicit and implicit language of ethics.

Notes on the Contributor

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Endnotes

1. The name of the organisation has been changed but the pseudonym is adequately descriptive to reflect the focus of its work.
2. Engeström (1987) refers to these four orders of contradictions as phases within an expansive or transformative learning cycle. In this paper, I use them in a more limited way as analytical tools to identify contradictions, while noting that the very act of sharing these insights may be indirectly transformative in relation to the interacting activity systems of SAQA, accredited education and training providers and employers.
3. The following organisations were founding members of the ELF: Department of Environment Affairs and Tourism, WESSA, Rhodes University Environmental Education and Sustainability Unit (RUEESU), Environmental Justice Networking Forum (EJNF), Earthlife Africa, Heinrich Boell Stiftung, South African NGO Coalition, KZN Department of Agriculture and Environment Affairs, Zero Waste Institute of South Africa, Green Network and the SADC Regional Environmental Education Centre (DEAT, 2009).
4. Unit standards are the 'smallest unit of educational achievement that can be credited for certification' (Allais, 2003). According to the NQF Network (1997, p. 2), unit standards: 'describe the result of learning, not the process' and are the 'meaningful end-point of learning that is worth formally recognising'. As these are nationally prescribed standards, their influence on course curricula and hence teaching and learning processes is thus significant and will be considered in this paper in more depth in the later section on the Rules of the course's activity system.
5. See Vorwerk (2004) for some critical perspectives on EEK.

References

- Allais, S. (2003). The National Qualifications Framework in South Africa: A democratic project trapped in a neo-liberal paradigm? *Journal of Education & Work*, 16(3), 305–324.
- Bauman, Z. (1998). *Work, consumerism and the new poor*. Buckingham: Open University Press.
- Bernstein, B. (2000). *Pedagogy, symbolic control and identity: Theory, research, critique* (revised edition). Lanham: Rowman & Littlefield Publishers.
- Bourdieu, P. & Passeron, J.C. (1977). *Reproduction in education, society and culture*. London: SAGE.
- Chaiklin, S., Hedegaard, U. & Jensen, J. (Eds) (1999). *Activity theory and social practice: Cultural-historical approaches*. Aarhus: Aarhus University Press.

- DoE & DoL (Department of Education & Department of Labour). (2002). *Report of the study team on the implementation of the National Qualifications Framework*. Pretoria: Department of Education and Department of Labour.
- DEAT (Department of Environmental Affairs & Tourism). (2009). Draft environmental learning forum for discussion. document based on the 2004 elf founding document, revised by deat for a stakeholder consultation in September 2009. Pretoria: Department of Environmental Affairs & Tourism.
- DEA (Department of Environmental Affairs) (2010). *Environmental sector skills plan for South Africa. A systems approach to skills and human capacity development*. Pretoria: Department of Environmental Affairs.
- Edwards, A. (2005). Let's get beyond community and practice: The many meanings of learning by participating. *The Curriculum Journal*, 16(1), 49–65.
- Edwards, A. (2007). Relational agency in professional practice: A CHAT analysis. *International Journal of Human Activity Theory*, 1, 1–17.
- ELF (Environmental Learning Forum) (2004). Draft discussion document for the establishment of an environmental learning forum. Howick: Wildlife Society of South Africa.
- Engeström, Y. (1987). *Learning by expanding: An activity-theoretical approach to developmental research*. Helsinki: Orienta-Konsultit. <http://lchc.ucsd.edu/MCA/Paper/Engestrom/expanding/toc.htm>.
- Engeström, Y. (2000). Activity theory as a framework for analyzing and redesigning work. *Ergonomics*, 43(7), 960–974.
- Engeström, Y. (2001). Expansive learning at work: Toward an activity theoretical reconceptualisation. *Journal of Education and Work*, 14(1), 133–156.
- Engeström, Y., Miettinen, R. & Punamäki, R. (1999). *Perspectives on activity theory*. Cambridge: Cambridge University Press.
- Leont'ev, A.N. (1978). *Activity, consciousness and personality*. Englewood Cliffs, NJ: Prentice Hall.
- Lotz-Sisitka, H. (2008). Change-oriented workplace learning and sustainable development practices. Research programme proposal, Rhodes University, South Africa
- Mukute, M. (2009). Expanding and exploring learning in sustainable agriculture activity systems. Unpublished doctoral thesis, Department of Education, Rhodes University, South Africa.
- Roth, W & Lee, Y. (2007). Vygotsky's neglected legacy: Cultural historical activity theory. *Review of Educational Research*, 77(2), 186–232.
- RSA (Republic of South Africa) (1995). South African Qualifications Act. Pretoria: Government Printer.
- RSA (2008). National Qualifications Framework Act No. 67 of 2008. www.saqsa.org.za/docs/legislation/acts/2008/act67-08.pdf, visited 18 April 2010.
- SAQA (South African Qualifications Authority). (2001). US 8367. <http://regqs.saqsa.org.za/search.php>, visited 4 May 2010.
- SAQA (2005). National Certificate: Education, training and development practices. Qualifications descriptor. <http://allqs.saqsa.org.za/showQualification.php?id=22901>, visited 18 April 2010.

- SAQA (2006). NQF objectives. <http://www.saqa.org.za/show.asp?include=about/about.htm>, visited 12 April 2010.
- Virkkunen, J. & Kuutti, K. (2000). Understanding organizational learning by focusing on 'activity systems'. *Accounting, Management and Information Technologies*, 10, 291–319.
- Vorwerk, C. (2004). Essential embedded knowledge: The forgotten dimension. *SAQA Bulletin*, 6(2). <http://www.saqa.co.za/docs/pubs/bulletins/bullvol6-2c.pdf>, visited 5 October 2010.
- Vygotsky, L. (1978). *Mind in society*. Cambridge, MA.: Harvard University Press.
- Wals, A. (2009). Learning in a changing world, changing in a learning world: Reflexively stumbling towards sustainability. In Olvitt, L., Downsborough, L. & Lotz-Sisitka H. (Eds), *Learning in a changing world: Selected papers from the 4th World Environmental Education Congress*. EEASA Monograph. Howick: Environmental Education Association of Southern Africa.
- Walters, S. & Isaacs, S. (2009). National qualifications frameworks: Insights from South Africa. In *The European Qualifications Framework linking to a globalized world*. Brussels: European Parliament. Available at http://www.saqa.org.za/docs/events/2009/eqf_paper.pdf.
- Warmington, P., Daniels, H., Edwards, A., Brown, S., Leadbetter, J., Martin, D. & Middleton, D. (2004). *Interagency collaboration: A review of the literature*. Bath: The Learning In and For Interagency Working Project.
- WESSA SustainEd (2006/2009a). *Education and environment: Learner handbook module 1*. Course notes for the Environmental Education, Training & Development Practices National Certificate (2nd edition revision by P. Chetty). Howick: Share-Net.
- WESSA SustainEd (2006/2009b). *Education and learning support materials: Learner handbook module 3*. Environmental Education, Training & Development Practices National Certificate (2nd edition revision by P. Chetty). Howick: Share-Net.