Chapter 9
Stewarding and Power in Networked Learning

Andrew Whitworth and Lee Webster

9.1 Introduction

Hodgson and Reynolds (2005, 11) call for an approach to networked learning design that 'provides a basis for a more democratic ethos within higher education programmes' when compared to approaches that focus on the individual, face-to-face experience. From this follows that such an approach needs to confront issues raised in democratic theory. For instance, Jürgen Habermas's position is that the democratic ideal can be equated with a consensus, where all parties affected by a decision have agreed to it. Habermas (1984) calls this the 'ideal speech situation' while acknowledging that, in practice, real decision-making is subject to a range of limitations including imperfect information, lack of time, incompatible worldviews, and the operations of power and hierarchy. Smaller groups, however, are more able to reach consensus (Gastil 1993) and distribute authority over the practices that emerge within these groups (Whitworth 2014), e.g. collective judgments about what information is relevant, what technologies can be used to manage the collaborative work, and so on: this is why Hodgson and Reynolds make their aforementioned claim. Yet they go on to query whether aspiring to an idealised consensus is a desirable approach for networked learning design. A democratic ethos may be more suited to networked learning precisely because dissenting voices can use the nodes and channels of the network to seek out fresh spaces, develop their own practices beyond the

A. Whitworth (✉)
Manchester Institute of Education,
University of Manchester, Manchester, UK
e-mail: Drew.whitworth@manchester.ac.uk

L. Webster
Alliance Manchester Business School, University of Manchester, Manchester, UK
e-mail: lee.webster@mbs.ac.uk

N. Bonderup Dohn et al. (eds.), *Mobility, Data and Learner Agency in Networked Learning*, Research in Networked Learning,
https://doi.org/10.1007/978-3-030-36911-8_9

surveillance of authority, and be part of ‘multiple and shifting‘ communities (Hodgson and Reynolds 2005, 12).

This chapter investigates the operations of group decision-making and the emergence of negotiated information practices, within learning networks, in order to reveal how power is integral to these processes and thus the role that community plays in networked learning. This is power in Foucault’s sense (1977): as something not simply used to oppress, but also to empower, something that learners in a setting can draw on to develop knowledge and practice. This investigation has been undertaken in an empirical research project, SPIDER (Stewarding and Power In Digital Educational Resources), based on a large data set, a corpus of text generated by groups of networked learners in higher education (HE), that has recorded micro-scale dialogues as they emerge during learning tasks. The data reveal how students learn to steward the digital habitat (Wenger et al. 2009) that the group draws on in order to complete its set tasks. These activities empower the networked learners in ways that accord with the intended learning outcomes embedded in the setting, but while the authority to steward the digital habitat and, thus, the information practices of the group is, to some extent, distributed across group members (cf. Whitworth 2014), proto-practices emerge alongside a proto-hierarchy that creates a level of differentiation in the members’ experience of stewarding. The pedagogical design in use in this setting, specifically the use of online discussions for assessment purposes, makes these practices and differences visible and open to scrutiny. We propose that this visibility contributes significantly to a democratic approach to networked learning design.

9.2 Background: Stewarding and Power in Networked Learning

The principal concern of the SPIDER study is how networked learning can develop digital and information literacies in learners in HE, along lines suggested by Gourlay and Oliver (2016): not as cognitive change, but as changes in practices, embedded in material and social networks. Gourlay and Oliver cite Gillen and Barton’s (2010, 9) definition which is appropriate to our concerns here: digital literacies are ‘the constantly changing practices through which people make traceable meanings using digital technologies’. This holds out the promise that these meanings can be traced within and through the digital practices that students are learning, as the outcome of collaborative and networked learning practices.

In attempts to understand how networked learning communities use ICTs and develop information practices, Wenger, White, and Smith’s *Digital Habitats* (2009) is a valuable reference work. Building on Wenger’s earlier studies (e.g. 1998) of communities of practice (hereafter, CoPs), Wenger et al. describe how communities that share learning needs create a ‘digital habitat’: a set, or ecology (Luckin 2010), of technological and communicative resources. Through the constant configuration

and reconfiguration of this habitat and the accumulation of choices made by community members, the CoP collectively negotiates what it means to be competent and digitally literate within their particular context. Each digital habitat emerges from these operations in distinctive ways: no two configurations are exactly alike.

A CoP is a social site in which learning needs, identity, definitions of competence, and judgments about relevance are constantly being negotiated. These judgments are rarely overt and/or formal. In many cases they are made implicitly as community members draw on established procedures or routines. However, some members of the CoP may have formal roles to play in stewarding the digital habitat, such as purchasing technologies, moderating websites, and defining a technology policy for the group. There is also a more informal educational aspect. Good stewards do not just configure technologies but assist the group in developing the capacities it needs to make best use of them. Stewards act as brokers (ibid, 28), a boundary zone, bringing new information into the CoP where it encounters other practices. In essence then, stewarding is the means by which the CoP collectively enacts its digital and information literacy (Whitworth 2014). The digital habitat is the accumulation of the judgments about relevance, and subsequent configuring/structuring work, that have been made by the CoP's members. Stewarding is thus a 'creative practice that evolves along with the community and reflects the community's self-design… as a vehicle for learning' and a 'critical part of community leadership, facilitating a community's emergence or growth' (ibid, 25).

Despite the significance of the notion for our understanding of how learning networks are configured, the stewarding idea has been subsequently underdeveloped. Wenger et al. (2009) is a guide for practitioners and does not discuss how stewarding may be conceived, and manifest itself, in different ways, depending on both the internal dynamics of a CoP and the external setting(s) within which that CoP must operate and with which it must engage. As Druckenmiller and Mittleman (2015, p. 572) say, 'little is known about the early life cycle of CoPs'. Can the act of developing and configuring a digital habitat spark the emergence of a CoP in the first place? How can community members *learn* to be stewards of a digital habitat, and what factors shape their learning? How do members of groups make decisions about what information and technology are relevant to the CoP, and how are they to be organised into particular configurations? And how do relationships and boundary zones with other contexts, and the relations of power that flows between and around these boundaries, affect the stewarding process?

Few research studies focus on how stewarding emerges, nor how it can be taught and learned. Gibbs et al. (2012) investigate the micro-interactions of a learning community, via the use of discussion board data, but their paper only sketches the emergence of new practices through these interactions. The authors note how messages exchanged in the CoP go beyond just 'Q & A' and include community building and negotiation of identity, 'sharing… tacit understandings of what it means to be a LITE [Local Information Technology Expert], how one should behave as a LITE in the workplace…' (Gibbs et al. 2012, p. 5). Davidson et al. (2014) describe a MA Educational Technology course in Canada which engages its students in technology stewarding as a form of 'service learning', but although there is detail

on the stewards' (students') motivations and insights, the focus of the chapter is on outcomes rather than the interactions. This interestingly illustrates that digital habitats can be shaped by stewards and they learn by doing so, but there is no investigation of how the community and stewards (and institution) interacted. Ayling and Flagg (2012) research an online CoP for teachers in New Zealand, via a survey of the 280 members and observation of postings on the site (powered by Ning) for 3 months. They draw attention to how community members create 'artefacts' that others can use in their own professional settings. This work is not distributed equally among community members. Most artefacts (in this case, blog posts) are created by two members of the group; large numbers of group members post nothing, identifying not as 'contributors' but 'information seekers'. Ayling and Flagg do not concern themselves, however, with how CoP members configure the broader informational space—including Ning, but not limited to it—to meet their learning needs.

Each of these studies has problems in common when it comes to analysing the educational elements of stewarding. Data on the *evolution* of the habitats are difficult to generate, as the community interactions that are the basis of these studies are not focused or directed. They emerge spontaneously and not as the result of pedagogical design, making it difficult to track the impact of specific interactions and how these coalesce into practice. If people are to be *taught* how to be stewards, then this may occur informally, within workplaces and the CoP itself, but could also be done within formal educational settings.

Goodyear, Carvalho, and Dohn (2016, 94) define learning networks as follows:

> We take a learning network to be a heterogeneous assemblage of people and things connected in activities that have learning as an explicit goal or a significant side effect. Coherence among the activities helps resolve the learning agenda of the network, which, in turn, helps trace the limits of the network.

Within HE, learning networks tend to achieve 'coherence' due to being bounded by administrative phenomena such as curricula, assessment regimes, and predefined sets of resources. In SPIDER we therefore investigate how stewarding can be taught in HE, specifically a professionally oriented postgraduate environment.

Yet there are two problems which must be accounted for by studies in this environment. Firstly, the field is characterised by a largely uncritical view of the notion of 'community'. As Hodgson and Reynolds state (2005, 14): '…the idea of community is invariably used normatively in higher educational discourse, so that while it might often be difficult to be sure of its precise meaning-in-use, it is strongly suggestive of values and practices which are unquestionably and morally desirable'.

Secondly, it is precisely these bounding phenomena—particularly assessment regimes—that instil into HE regimes of power and surveillance. Who has defined the assessment criteria, for example? What information practices are valued and thus rewarded by high grades, and what are riskier, possibly deviant? Learning networks cannot be studied as if they reside in an inert space, insulated from broader social and material relations. HE has many highly asymmetrical relations of power and authority. The 'lecturer' has authority invested in them, both by the institution and the students. They define core elements of the students' learning environment

and the criteria against which student performance is then judged. Tutors thus have a level of discursive control over the learning environments they manage and the practices which emerge there.

Yet nor is power simply imposed on students from above. It can be generated by them and on their behalf, through dialogue and other forms of pedagogical interaction. This is explicit in any intention to *empower* the learner, to have them develop capital and the ability to make changes to their own ecology of resources and the habitat of the community. This is a Foucaultian view of power, as something in 'flux' within a discursive environment, with structures of knowledge being the permanences that arise out of this flux (Kendall and Wickham 1999, 55), and power used to affix these structures in place within the digital habitat of a given community. This is not power as an oppressive tool, but as an enabling quality, and in this sense is never asserted without a parallel *resistance* to that power (*ibid*, 50).

Our interest is therefore in how the design of a networked learning environment can encompass and generate power in these ways and how this can develop in learners the capacity to steward, not only their present (HE) digital habitat, but those they will go on to engage with in later life. It is how the agency of the students and the structures of the university systems interact that is at the core of our enquiry. Distributing authority over stewarding requires students to begin to make their own claims to knowledge, to make their own judgments about the relevance of particular resources, and decisions about how to configure their digital habitat. Hodgson and Reynolds (2005, 15) extend the idea of a 'learning community' as far as 'an advanced interpretation of collaborative design… [where] as well as sharing ideas, tutors and students take joint responsibility for planning, implementing and evaluating the detailed design, content and direction of the course'. Can this ideal be approached in an actual learning network? Can at least some authority be dispersed from the 'authoring' academic to the empowered student, and how does this enable learning, stewarding, and the development of information practices?

9.3 Methodology

9.3.1 The Setting

The setting for the SPIDER study is a core course unit on a postgraduate degree in educational technology. Graduates from the programme often take up roles as educators or learning technologists with responsibility for stewarding technology in a range of settings, where they need to make informed judgments about the relevance of informational and technological solutions to educational problems. The unit runs for a full academic year and explicitly encourages learners to develop practices relevant to deconstructing learning environments, understanding how they have been shaped by prior decisions and practices, and proposing enhancements to meet the needs of diverse stakeholders.

The unit is taught to both on-campus and distance learners. Both are brought together in online tutorial groups comprising 5–7 learners. As part of their assessment on the unit, these groups engage in a series of three online discussion activities, each lasting 2 weeks. These activities increase in complexity over the series. In the first task, learners read and discuss an academic paper. The second places them in a simulated decision-making environment in which each group represents different stakeholders, and the third requires them to, as a group, propose designs for a technology enhancement to two educational environments, specifically museums. The tasks increase in complexity in terms of the information required. The first two tasks are defined in ways that provide groups with the information they need (the text in the first, the scenario in the second), but in the third task, groups must gather for themselves the necessary information, through a field trip. The first discussion is actively moderated by the course leader and a teaching assistant, as for many learners, this is likely to be their first encounter with this mode of learning (a majority of the students are from outside the UK). This scaffolding is progressively withdrawn, however. By the third activity, the boards are only monitored by the teaching assistant in case of procedural questions or technical problems. Thus, the series of activities is designed to promote independent, problem-based learning and to do so in an environment that encourages learners to develop transferable stewarding skills.

It would be remiss to identify these groups as 'full' CoPs as there is no requirement that the members engage in sustained interaction, after the course unit finishes. But though the tasks are, to some extent, simulations of professional 'knowledge work', the activities are graded, meaning that the groups have an *authentic* and *shared* objective: to complete their tasks in ways that are rewarded in the marking scheme (the rubric being publicised to them from the start of their engagement). Implicit in the criteria by which students in HE, particularly at postgraduate level, are assessed is the expectation that learners exercise independent information- and knowledge-generating capacity. In addition, students in collaborative settings are 'nomadic' knowledge workers, lacking a stable physical location on campus (like a shared office) and thus having to 'manage and orchestrate' a 'constellation' of applications, spaces, and devices in order to undertake their work (Rossitto et al. 2014, 137). Therefore, as we will show, the learners in this setting draw on the digital habitat provided by the instructor and the institution, but also introduce into the habitat their own resources. These introductions are, or are not, validated by other members of the group, through the dialogues that occur during each activity. Each group (Goodyear et al. 2016, 96) 'customise[s the] task to suit their own needs and interests… [this] provides an opportunity for them to strengthen their self-regulation skills'. 'Tasks are designable, activities are not -- they are emergent' (ibid). Students can complete these tasks in many ways. Thus, the digital habitat evolves, as a response to the designed task but not as a direct outcome of it. The groups can therefore be seen as social sites in which members are learning how to use the techniques of stewarding to help meet these learning needs, as each plays their part in the collective task of (re-)configuring the 'starter' digital habitat.

Nevertheless, in the small but crucial fact that these discussions are graded is concentrated significant power relations within this setting. Time is also a constraint, or rather, there is a specific relation to time (cf. Timmis and Williams 2016, 113) that is integral to the setting of the task (a deadline), and this constrains the activities of both individual students, and the groups, in that they cannot extend their discussions indefinitely.

9.3.2 The Data Set

The data set is comprised of the dialogues as recorded on the Blackboard discussion boards provided as part of the groups' starter habitat. These are not *post hoc* reflections on or reconstructions of judgments made (cf. Perriton and Reynolds 2014), but on-the-spot records, open to documentary analysis due to their stability. The dialogues on the boards offer both quantitative and qualitative data. Quantitative data on numbers and length of posts, patterns of posting over time, and the distribution of posts among group members have all been gathered, but for reasons of space they are not discussed further in this chapter. In qualitative terms, the data set offers a corpus of over one million words of text that allows for investigation of more than just each individual's subjective experience of the learning environment, but the collective construction of digital habitats and the practices within them.

The research also draws on ten interviews conducted with learners after the course unit was concluded. We also interviewed the course tutor. These interviews are focused on deriving underlying motivations for activities or perspectives manifested on the discussion boards and (in the tutor's case) the design of the learning environment, but not immediately apparent from the text itself. Ethical consent for the research was gained from the local approval committee. Confidentiality has been achieved by the removal of all institutional and personal identifiers. All learners referred to in the discussion board posts have had their names reduced to the initial letter of their forename (e.g. student G), whereas students interviewed are referred to by number (e.g. student 2).

The study gathered data from two academic years, 2015–2016 and 2016–2017. The course materials and assessment activities were the same in both years. Each cohort was divided into 10 online discussion groups (given various colour codes for identification, which have been incorporated into the metadata), of 5–7 students each. In the following sections, quotations from discussion boards are tagged according to the following conventions:

[15/Blue/1] [16/Green/3]

The first two digits show the academic year from which the data are drawn, that is, 2015–2016 or 2016–2017, respectively. The last digit is the number of the activity in a given year (1–3).

9.4 Findings

9.4.1 Stewarding and the Development of Community Artefacts

Each of the twenty groups has a 'starter' digital habitat. This is comprised of the course content, the administrative architecture into which it is placed (syllabus, course schedule, assessment requirements), the technical architecture (Blackboard VLE, discussion board), and the communicative and facilitative skills of the tutor and teaching assistant (TA). This starter habitat largely reflects the decisions and judgments of the tutor, but elements have seeped down from the institution, e.g. the need for there to be some kind of summative assessment and the use of Blackboard as the VLE (tutor interview). It has been stewarded by the tutor and, in a secondary way, his TA, prior to the implantation of the embryonic CoPs into this landscape: it is a habitat without inhabitants.

From the earliest stages, learners add to and reconfigure the 'starter' habitat: 'Specific artefacts are designed, developed and adopted by the community to meet its requirements' (Druckenmiller and Mittleman 2015, 575). These artefacts consist of more than just discussion board posts (cf. Gibbs et al. 2012; Ayling and Flagg 2012). Students introduce, firstly, new sources of information into the habitat and, later on, new technological tools and spaces.

For example, take this discussion from the third activity, in which students are tasked with designing an application for at least one context, a museum, that they have no direct experience of (see Webster and Whitworth 2017). Student W here responds to an earlier post by A [15/Orange/3]:

> [A], nice suggestions for the first app! Let's hear a few more and come to a decision by when? Is Tuesday evening (6 pm UK time) too soon? I also have suggestions for the second museum. I visited the Origins centre in Johannesburg - you can view it at http://www.origins.org.za/.

Note how he successively:

- Validates the prior suggestion of student A for the form of the design task
- Proposes a schedule for the group to take a decision on how to proceed to the next step
- Suggests a source of information where colleagues can learn about his suggested museum (context)

Other students provided similar information in image form, sharing photographs of their chosen museum, while still others drew on anecdote, giving a narrative account of their visit. These introduced resources are then subject to validation by other members. Here is student A replying to the post from W quoted above:

> I like [W]'s suggestion about Origins museum, so I vote to [*sic*] it with [C]. I have checked the website and it sounds interesting. I suggest the idea about VR to be to this museum and we will think more about it next week. It could move the museum to be virtual. The visitor can walk virtually inside the museum and be close to the exhibits and so on.

From a different group, this student acknowledges how new information provided—in this case about how a museum in China uses tablets to display visitor information—has changed their ideas about what the group could propose. They follow up this with further suggestions [16/Diamond/3]:

> [Q] and [G] have made me think about the interaction visitors expect when they go to any kind of museum. The iPad idea in the Chinese exhibit was an eye-opener for me in what you can do for the visitor…. the iPad is something I want to expand on. How about using Bar-Coding or QR Codes next to exhibits that take you directly to an interactive program pre-loaded on the iPad for that display….

These utterances and responses coalesce into both different outcomes and different information practices for each group. The 16/Diamond group propose a design that uses QR codes, whereas 16/Blue suggested an audio guide (for the same museum), and so on. Thus, the same pedagogical processes can lead to diverse outcomes.

In addition, the digital habitats of each group evolve differently, without *explicit* direction from the course tutor. Here is where stewarding in Wenger et al.'s (2009) sense is more explicitly visible. Members of groups bring together their community understanding and technology awareness to make selections of (new) technological and informational artefacts, help integrate them into the practice of the group, and help other members make the transition to using them (Wenger et al. 2009, 26–7). 15/White, for example, introduce a wiki into the habitat (see the next section); other groups use WhatsApp or videoconference tools to coordinate work. This variation might seem a 'natural' outcome of discussion, but that is precisely the point. Each group separately and distinctively works towards optimising the practices that they perceive as allowing them to meet their instrumental goals (getting the grade). They are 'patchworking': 'synthesising knowledge and creating their own study-related artefacts' (Timmis and Williams 2016, 119, via Dohn 2009).

Introduced artefacts are also knowledge-based, drawing on *authority.* In two other working groups, two members had previously worked in museums and therefore bring prior professional experience to their group discussions. In one group, student B describes his visit to an art museum in Asia and draws upon his previous work experience [15/Blue/3]:

> Before moving to Asia I lived and worked in Europe at [an art museum]. I was part of the education department creating and imparting guided tours.

This prompts student H to reveal that she is a keen museum goer, has a shared interest in art, and is therefore in common ground with B. As a result of this, H shares with the group a video (made for a different project) analysing how music is used within an art museum in Europe. The dialogue that included B's claim to authority in this context has led to a new resource being introduced into the habitat, in ways that would be unlikely to happen in the more constrained, face-to-face classroom environment.

Questions posed also serve as 'hooks' for subsequent utterances and are therefore also a form of stewarding, or 'shepherding' the dialogue, to help both the group and the individuals within it meet their learning needs. Take this example [15/Orange/3], where student C tries to find out from his colleagues about the museum

context that he did not visit, but (as part of the task) is still expected to make critical judgments about, in dialogue with the other students. He uses various prompts to elicit the information he needs:

> What about the lighting and layout of the museum? Was there a set path? Were you guided along … or could you move around freely and revisit other exhibits?...Can I ask a few questions..... Only basic answers needed of course!...

9.4.2 Power and Resistance

Stewarding is therefore evident in the discussions of each group. Each group creates its own distinctive constellation of informational resources, tools, questions, and other 'study-related artefacts'. But this does not happen against an inert background, nor in some kind of ideal way. Students' practices are not emerging in isolation, but from a nexus (cf. Hui et al. 2017) where various flows of information and power intersect. The most direct of these flows is that by which the tutor's authority influences the emerging practices, particularly due to the three discussion activities being assessed (collectively accounting for one-third of the overall unit grade). Student 3, in interview, explicitly acknowledged this influence:

> There were many times I didn't want to contribute to the discussion but I knew I had to do it. In fact I had a talk with another person yesterday who asked if the discussions had not been marked would you have contributed? I don't feel I would have contributed as much, if I didn't feel it would have impacted my grades I would speak but not as much.

However, a Foucaultian view of power sees it as not only wielded from above, by dominant interests in a setting against subordinate ones, but as something which emerges at the micro level, from discursive interactions. Kendall and Wickham sum up Foucault's view of power well (1999, 50–51):

> Power… is not essentially repressive; it is not possessed, but is practised. Power is not the prerogative of 'masters' but passes through every force. We should think of power not as an attribute (and ask, 'what is it?') but as an exercise (and ask, 'how does it work?')…. In addition, forces have a capacity for resistance, such that power is only exercised in relation to a resistance, each force having the power to affect and be affected by other forces… Resistance, then, is not a source of despair or celebration. The task of analysts… is to describe the way in which resistance operates as a part of power….

There is an essential *visibility* of the practices that emerge on the boards. At first sight, this seems to support a view of the boards as a 'panopticon', a tool for surveillance and continuous discipline (Foucault 1977). Brookfield (2005, 135–6) describes how '[c]ompulsory visibility… a relation of surveillance…is inscribed at the heart of teaching… as a mechanism that is inherent to it and which increases its efficiency'. Students *self*-discipline by trying to display practices that are those they believe the tutor expects and will thus reward with higher grades. Moreover, they will discipline other students in the group. Student 3 continued in her interview:

> There was another girl who was not very active so me and [Student L] were trying to get her to speak so if she didn't appear on [course VLE] we had to find a way to speak with her. So we started a discussion on Facebook and said 'look this is what's going on'. Whatever we discussed with her we posted to the discussion board. *There were a lot of times when we told to log on and speak and write something because we were all marked. (*our emphasis).

There are two important things occurring here. Firstly, this is not a direct imposition of power, but a *construct*: the actual operations of power are constructed and negotiated by the students themselves, just as much as the other (informational) practices which are in play here. The tutor only occasionally makes posts that direct students to contribute more, or in certain ways, even in the first activity; more common is that he and the TA provide 'hooks' (see previous section) that help link the ideas of one group member with another (e.g. 'A, what do you think of B's idea here?'). But by the third activity the tutor completely withdraws from the discussion. Any perception of his ability to intervene and direct the discussion must therefore be based on a kind of residual presence, indirectly expressed through texts such as the parameters of the set activity, the marking rubric, and the formative feedback given after the first two activities. Secondly, the visibility of the contributions to the emerging practice, as well as just providing useful data for judgments about the students' grades (and, indeed, viable data for SPIDER), allows *the members of the community* to scrutinise their own emerging practice. And it is in the new practices that enter the CoP that resistance arises in relation to the pedagogical and institutional power in this setting.

Both these are illustrated when students introduce new artefacts into the digital habitat that are a perceived improvement over the Blackboard discussion boards and engage in stewarding in an explicit way (cf. Wenger et al. 2009, 26–7). From student 4's interview:

> Our own *VLE proved to be tricky sometimes*... I valued that, as a team, we made use of different ways to communicate, group our ideas and give shape to our preliminary decision and strategy. Gmail, Facebook, Google Drive, and the chat room helped us explore the use of social media and Web 2.0 *tools to better communicate and write collaboratively*. (our emphasis).

A detailed example of this comes from the [15/White] group. Having experienced the boards in activity 1, the group, prompted by student J, reconfigures their information landscape by introducing a wiki to help them manage the more complex activity 2. This from J:

> I have created a wiki page for us, how would you all feel about using that to share all our ideas etc.? It would make information easier to summarise too I think.

J goes on to mentioning the practices around the wiki, the division of labour that the group has agreed on, and another technological resource they filter in, a videoconference:

> To ease the number of threads perhaps after the wiki has been edited by all (answering the questions posed to us…) we could try to summarise/do our own parts… then post them to the bottom of the wiki so we can all read what will be posted for the group? We can then use the adobe connect session to make sure we are all in agreement? How does that sound?

The group complete activity 2 with the use of these tools. A few weeks later at the beginning of the third activity, J suggests setting up a wiki again. C supports this suggestion immediately, saying [15/White/3] 'Not only do you like a good wiki…. We all like a good wiki now!'; showing how J's selection and integration of a new technological resource has been validated by members of the group and led to changes in group information practice.

Yet self-discipline, based on the *perceived* and *indirect* surveillance of the tutor, is once again generated by concerns that this will damage the group's instrumental goals (successful completion of the task, but in ways validated by the marking rubric). Prompted by a reminder about the activity parameters from a fellow student (not the tutor or TA, note), J worries that the wiki posts will not 'count' in assessment:

> I'm sorry, feel a bit guilty that I lead us down the wiki path without realising the fruits of our labour would not be seen but at the same time I feel it made the discussion a lot more effective that the threads would have done!

The following day she reposts the wiki content onto the board, as different posts attributed to their authors, even though this somewhat defeats the object of using a wiki (collective creation of a text); she does it because as grades are given for individual work, she seeks to ensure different posters achieve their individual outcomes. Thus, in the end, she configures not only her individual information practice, but also the other individual practices (contributions) of the members, to conform to what are perceived as the demands of the grading system, so that the group can *collectively* benefit.

Note, though, that these posts are transferred into the assessed discussion from a space (the wiki) that is free of direct tutor surveillance. Members of this learning network thereby develop 'opportunities to participate in both private and public forums simultaneously', even if there cannot be said to be a true 'plurality of competing publics' in this space (Hodgson and Reynolds 2005, 18 via Fraser 1992). Thus, this case epitomises the way that power within this environment is innately bound up with resistance. These new practices—creating different spaces in which to coordinate work—were developed independently and, on the surface, counterposed to those mandated by the tutor, viewed by the group as beneficial to *both* the instrumental and communicative outcomes of the task. Through this act of resistance, a new resource is introduced, validated by other members, and the habitat evolves.

9.4.3 The Emergence of Stratification

If the approach to networked learning design in this case is, as noted in this chapter's introduction, one that affords a more democratic pedagogy, then it needs to affirm the importance of difference and diversity (Hodgson and Reynolds 2005, 19). Difference is a learning opportunity, but can also fuel power relations, stratification, and hierarchies. Command structures can emerge within communities, and at times, some members become 'marginalised in order that the integrity of the community is preserved' (ibid, 16). In an earlier publication based on the SPIDER project

(Webster and Whitworth 2017), we affirmed the value of alterity, or 'outsideness' to the learning taking place within these groups and the broader network and noted how the presence of distance learners in the setting was the source of this quality. But does stratification open up within the groups along fractures other than the distance/on-campus split? Rather than difference and alterity, is 'normocentricity', as Hodgson and Reynolds term it (2005, 16), what is being rewarded by the marking scheme and, hence, the dominant discourse within this setting?

The starter digital habitat is the same for all, but that does not mean each student interacts with it in the same way, within or across groups. Variation occurs due to differences in learners' personalities; command of English; professional, technological, or prior managerial experience; and so on. As the set tasks increase in complexity over the series, for the groups to complete them in ways that meet their instrumental goals (a good grade, on time), they need to establish divisions of labour. In the guidance given by the tutor, Laurillard (2002, p. 155) is cited to suggest that among the different roles that can come into play here are those of summariser, moderator, or source checker. The value of these roles is something the group learns through engaging with the activity. But this is also an aspect of the work that introduces elements of stratification into the 'starter' habitats.

Take this post from student G [16/Diamond/3] who alludes to the role played by A in the previous activity:

> I do feel like we are at least going to need a leader (someone who is going to guide us, tell us to move on, make a decision etc.). Last time [A] did an amazing job at leading us so I think we should give her a break this time. Unless [A] you really want to lead us to victory again. It's up to you really.

A replies:

> I agree I think it's helpful to have a leader for the discussion task. I'm happy to let someone else have a go this time around! I think it may also be helpful to have a summariser we wrote a lot last time and it was really helpful to have someone drawing all those ideas together so we didn't need to search through masses of posts when referring back. I'd be happy to have a go at this role, unless anyone is really keen to have a go. In terms of the other roles, I think we're starting to become more selfregulating as a group, so I'm not sure they're necessary i.e. we're all pretty good at backing up our points with literature, drawing others into the conversation and generally moderating the discussion.

A credits the group as a whole with good information practice (e.g. 'backing up our points with literature'). But she and G both also recognise the instrumental and the communicative benefits of establishing divisions of labour within the group and propose that they take on particular roles here. Thus, they are suggesting a reconfiguration of the group's habitat, the information flows, and practices therein.

Reaching a consensus within the groups is not something that happens spontaneously or just because it is called for by the parameters of the task. Just as students introduce resources such as websites, photographs, and technologies to help build digital habitats, these *roles* are themselves part of the 'constellation' of resources that the group brings to bear to complete the task. This introduces an unevenness into the distribution of authority within the group, as observed by student 2 in their interview:

> There were some occasions, however, when I felt that we were not going anywhere… I have been a manager before, and making these sorts of difficult decisions is part of being a manager. *That's why I felt the need to take the lead sometimes* and make certain decisions for the team. (our emphasis).

Here, then, is where we can see the outcomes of the group work as including not just emergent practices, but an emergent hierarchy—stratification and difference within the group that *did not exist* prior to the start of the series of tasks.

Finally, note that groups are fixed in membership. Although in one case in 2016–2017, the tutor moved a student (with his permission) from one group to another to rebalance numbers after another student left the course, normally students stay in the same group throughout. Hodgson and Reynolds' claims (2005, 11) regarding the benefits of networked learning for democratic opinion formation are not manifest here because there seems no easy 'exit' for students who for whatever reason may be dissatisfied with a group and its discourse and no facility for splinter groups to form. The assessment tasks are a locus of power and hierarchy in this setting and the discussion boards, the locus of surveillance.

However, 'hidden transcripts' (Scott 1990) can still be distributed beyond the purview of the tutor, through the spaces and channels that students set up beyond the formal bounds of the course environment, that is, the VLE. Dialogues occurring outside the boards provided support and content for these 'mission-critical' boards, but were not accessible to the tutor except where groups decided to transcribe certain utterances into them. Note that this was also true of our research methodology, which (as with any other such project) has 'bounded' the field of study around the same artefacts, the discussion boards. Beyond these we have seen only what we have been permitted to see by the students, in this case through the interviews.

9.5 Conclusion

As noted earlier, the differences and diversity within these groups offer not only learning opportunities, but also fuel stratification. Consequently, these groups should not be idealised as democratic decision-making fora. The constraints imposed by a marking rubric and deadline, and the lack of an 'exit' option for students, are very apparent and result in a level of 'normocentricity' in group interactions. Dissensus within groups is not suppressed, but it is kept within private spaces. It is not the case that 'everything' in the group happens as if the actors' only motivation was to complete the task (cf. Hodgson and Reynolds 2005, 20, via Sauvagnac and Falzon 1996, 251). But there is a substantive focus on completing the task on time and on marshalling the group's constellation of resources—its digital habitat—to do so in a way that the students believe will result in the most desirable outcome.

Nevertheless, these factors do not devalue the worth of the groups as social sites in which group members can learn stewarding practice. As Gherardi et al. (1998. 278) state, CoPs are not characterised, at least in any defining way, by a 'consensual dimension, or [a] sense of harmony or closeness…'—rather, they are creations that

'support the carrying out and perpetuation of a practice'. All groups show clear evidence of stewarding in the sense of configuring a constellation of resources. Although, at times, more experienced or confident group members engage in the educational aspects of stewarding, taking the lead when it comes to 'selection and installation' of new resources (Wenger et al. 2009, 26) and 'adoption and transition' (ibid, 27), this is not a simple transfer of knowledge from stewards to colleagues. Rather, we see evidence of a more emergent form of knowledge, a distribution of cognition among the group members (Parchoma 2018) that is exemplified by, and embedded within, the materiality of the digital habitats they are building and how the specific configuration thereof is adjusted, and, when necessary, re-validated, by the group as their tasks unfold. The informational environment, though at first reflecting the power of the tutor and institution—and then, at times, the authority of more experienced group members—evolves in response to the students' collective learning and the ways they assert resistance to the tutors' power, for example, by introducing tools for discussion which are private and not available to be scrutinised by the tutor (as in the case of 15/White's wiki, for instance). The emergence of new practices within each digital habitat involve group members drawing on the power that flows around the setting. Thereby, new practices and *new knowledge* emerge.

Power and knowledge are *not* the same thing in Foucault's worldview: to think they are is a 'vulgar reading' of his work (Kendall and Wickham 1999, p.55). 'Power is non-stratified, local, unstable and flexible; knowledge is stratified, stable and segmented' (*ibid*). The power that has been invested in this setting through the pedagogical design of its information landscape by the tutor is simultaneously resisted by the group; it is this resistance that then contributes to the formation of knowledge and, consequently, practices. Whenever a student makes a suggestion, such as the use of a wiki instead of the discussion boards (a move in dialogue) and that is validated and built on by others, a new practice potentially emerges within the group—and with it, stratification.

This must not be seen as an undesirable outcome of the pedagogical design. Indeed, it is central to exploiting the value of *difference* in the groups and giving students material for reflection, an understanding of how stewards work at the boundary zones, bringing in new (different) practices from other contexts and, through dialogue, reaching agreement on how to shape the digital habitat of the community. These learners are developing a sense of the *value* of stratification to the development of information practices in communities of practice they will go on to *subsequently* join. The grading of assignments is thus not incompatible with learners' developing authority over their information practices (Whitworth 2014). This encounter with institutional practices is a generator of power in the Foucaultian sense: something that can later be used for personal, professional, and social change and the professional and effective management of the digital habitats used in networked learning more widely.

Acknowledgements Thanks also to Professor Helen Gunter for her input to this study.

References

D. Ayling, E. Flagg, Getting Stuck in: Learners Participation in an Online Community of Practice. New Zealand Association for Cooperative Education 2012 Conference Proceedings, pp. 31–37, 2012

S. Brookfield, *The Power of Critical Theory for Adult Learning and Teaching* (Open University Press, Maidenhead, 2005)

A. Davidson, I. Gulka, A. Valle, C. Castonguay, Technology stewarding as a medium to develop and sustain niche online communities, in *Educational, Psychological, and Behavioral Considerations in Niche Online Communities*, ed. by V. Venkatesh, J. Wallin, C. Castro, E. Lewis, (IGI Global, Hershey, 2014), pp. 228–247

N.B. Dohn, Web 2.0: Inherent tensions and evident challenges for education. Int. J. Comput.-Support. Collab. Learn. **4**, 343–363 (2009)

D.A. Druckenmiller, D. Mittleman, A Design Theory for Digital Habitats: Building Virtual Communities of Practice. *48th Hawaii International Conference on System Sciences* (2015), https://doi.org/10.1109/HICSS.2015.75

M. Foucault, *Discipline and Punish: The Birth of the Prison* (Penguin, London, 1977)

N. Fraser, Rethinking the public sphere: a contribution to the critique of actually existing democracy, in *Habermas and the Public Sphere*, ed. by C. Calhoun, (MIT Press, Cambridge, MA, 1992), pp. 109–142

J. Gastil, *Democracy in Small Groups: Participation, Decision Making and Communication* (New Society, Philadelphia, 1993)

S. Gherardi, D. Nicolini, F. Odella, Toward a social understanding of how people learn in organizations: the notion of situated curriculum. Manag. Learn. **29**(3), 273–297 (1998)

M.R. Gibbs, G. Wadley, S. Ng, Using 'Simple' Technology to Support Geographically Distributed Communities of Practice. IEEE 2012 Conference on Technology and Society in Asia, 2012

J. Gillen, D. Barton, *Digital Literacies: A research Briefing by the Technology Enhanced Learning Phase of the Teaching and Learning Research Programme* (London Knowledge Lab, London, 2010). http://www.tlrp.org/docs/DigitalLiteracies.pdf

P. Goodyear, L. Carvalho, N.B. Dohn, Artefacts and activities in the analysis of learning networks, in *Research, Boundaries and Policy in Networked Learning*, ed. by T. Ryberg, C. Sinclair, S. Bayne, M. de Laat, (Springer, New York, 2016), pp. 93–110

L. Gourlay, M. Oliver, It's not all about the learner: reframing students' digital literacy as sociomaterial practice, in *Research, Boundaries and Policy in Networked Learning*, ed. by T. Ryberg, C. Sinclair, S. Bayne, M. de Laat, (Springer, New York, 2016), pp. 77–92

J. Habermas, *The Theory of Communicative Action*, Reason and the Rationalization of Society, vol 1 (Heinemann, London, 1984)

V. Hodgson, M. Reynolds, Consensus, difference and 'multiple communities' in networked learning. Stud. High. Educ. **30**(1), 11–24 (2005). https://doi.org/10.1080/0307507052000307768

A. Hui, T. Schatzki, E. Shove, *The Nexus of Practices: Connections, Constellations, Practitioners* (Routledge, London, 2017)

G. Kendall, G. Wickham, *Using Foucault's Methods* (Sage, London, 1999)

D. Laurillard, *Rethinking University Teaching*, 2nd edn. (Routledge, London, 2002)

R. Luckin, *Redesigning Learning Contexts* (Routledge, London, 2010)

G. Parchoma, Traces of cognition as a distributed phenomenon in networked learning, in *Networked Learning: Reflections and Challenges*, ed. by N. B. Dohn, S. Cranmer, J. Sime, M. de Laat, T. Ryberg, (Springer, New York, 2018), pp. 23–38

L. Perriton, M. Reynolds, 'Here be dragons': approaching difficult group issues in networked learning, in *The Design, Experience and Practice of Networked Learning*, ed. by V. Hodgson, M. de Laat, D. McConnell, T. Ryberg, (Springer, New York, 2014), pp. 109–126

C. Rossitto, C. Bogdan, K. Severinson-Eklundh, Understanding constellations of technologies in use in a collaborative nomadic setting. Comput. Supported Coop. Work **23**, 137–161 (2014)

C. Sauvagnac, P. Falzon, Collaboration and underlying issues or the surprises of cooperative dialogues. Comput. Supported Coop. Work **5**, 251–266 (1996)
J.C. Scott, *Domination and the Arts of Resistance* (Yale University Press, New Haven, CT, 1990)
S. Timmis, G. Williams, Transitioning across networked, workplace and educational boundaries: Shifting identities and chronotopic movements, in *Research, Boundaries and Policy in Networked Learning*, ed. by T. Ryberg, C. Sinclair, S. Bayne, M. de Laat, (Springer, New York, 2016), pp. 111–124
L. Webster, A. Whitworth, Distance learning and alterity: facilitating the experience of variation and professional information practice. J. Inf. Lit. **11** (2017). https://doi.org/10.11645/11.2.2231
E. Wenger, N. White, J. Smith, *Digital Habitats: Stewarding Technology for Communities* (Portland, CPSquare, 2009)
A. Whitworth, *Radical Information Literacy: Reclaiming the political heart of the IL movement* (Chandos, Oxford, 2014)