

Mapping Literacy Practices: Theory, Methodology, Methods

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Abstract

The *Literacies for Learning in Further Education* (LfLFE) research project has been funded for three years from January 2004 as part of Phase 3 of the TLRP. The project involves collaboration between two universities and four further education (FE) colleges. The intention is to investigate students' everyday literacy practices and explore ways of mobilising these to enhance their learning on college courses. The LfLFE project does not view literacy as a set of individual skills and competencies alone, but as emergent and situated in particular social contexts (Barton, Hamilton and Ivanič, 2000). As such, literacy practices are not static or bounded spatially or temporally. A central concern for the project is to understand how the literacy demands of college life and being a student relate to the wide range of students' other literacy practices. As part of the work of the project, the group is undertaking a 'mapping' of the literacy demands associated with student learning across a wide range of FE courses. This paper explores the methodological debates in planning and operationalising this mapping.

Introduction

This paper draws on empirical data collected on a TLRP Phase III research project, *Literacies for Learning in Further Education* : (<http://www.lancs.ac.uk/lflfe/>), (hereafter, LfLFE). This project builds on a pilot study which found that FE students engaged in a sophisticated and complex variety of literacy practices outside the college which were not easily transferred into college-related literacy events. The premise for the current project is that the literacy demands and practices of FE colleges are not always fashioned around the resources people bring to student life. Therefore, the task of the three-year LfLFE project is to examine literacy demands and literacy practices in FE, and thereafter to research the impact of interventions that seek to mobilise the literacy practices of students in new and more effective ways.

This research focuses on the use, refinement and diversification of literacy in FE. We are not concerned with the learning of literacy as a basic skill, but with the diverse *literacies* that students may bring to their learning and those that their learning requires; with the diversity of practices through which positive learning outcomes will be supported and developed in a range of subjects and at a range of levels. For the purposes of the project and this paper, we take 'literacy events' to mean an observable action or group of actions in which a text plays a role, while 'literacy practice' relates to the knowledges, feelings, embodied social purposes, values and capabilities that can be brought into play through the reading and writing of texts in various modalities. The literate person is expected to

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be able to work with a range of new types of text and with communication in different modalities – both visual, aural and in combinations of both (as with ICT, for example). Kress and van Leeuwen (2001) use the umbrella term 'communicative practice' to denote the multimodal, socially and spatio-temporally situated, and embodied use of semiotic resources. The substantive and empirical focus of our research is the subset of multimodal communicative practices which involve written language in some way, and on their capacity to support learning across different subjects in F.E. This paper looks at the research team's efforts to construct a *research methodology* that would be sensitive to the multimodal, situated and embodied experience of staff and students.

This project is designed around four overlapping phases, central to which is the aspiration to 'map' the literacy demands of being a college student of specific subjects, the literacy practices generated by those demands, and the literacy practices in which students already engage in different domains of their lives. Our working hypothesis is that students have greater literacy capabilities than are realised through the types of literacy demand placed upon them through their learning programmes. The initial phase of the project has involved trying a range of approaches to mapping literacy demands within our four partner colleges. Phase 1 also involved researchers in piloting research methods which may later be deployed in case studies within selected subject areas in order to understand the literacy practices of students across all areas of their lives. In the process, we have had to bring to the fore our taken-for-granted assumptions at a methodological and theoretical level of what we mean by 'mapping'. As a large multi-disciplinary team, this has involved surfacing differences of perspectives with consequences for both what we have done and what we make of the data we have collected. This paper attempts to provide some insight into the implications for our project – and hopefully for others – of what can happen when we take 'mapping' seriously as a research method.

Who maps what? Meanings of 'mapping' as a research method

At the outset, members of the research team noticed that some staff 'map' the elements in a vocational or academic curriculum against the outcomes which constitute the 'Key Skills' (England) or 'Core Skills' (Scotland) of communication, numeracy and ICT. In England particularly, there has been encouragement to do this since the introduction of Key Skills to Curriculum 2000. This mapping undertaken by F.E. staff is represented in the top row of Figure 1. This is 'mapping' in the mathematical sense of the word², meaning 'associat[ing] each element of a set with an element of another set' (NODE 1998). We initially envisaged Phase 1 of the project in these terms, attempting to access some of these mappings as self-evident data on the literacy demands of F.E. courses.

On reflection we sensed we needed to do more than just collect documentary evidence: we needed also understand how staff *teaching* curricula viewed the literacy demands they made, how students were *experiencing* curricula in terms of literacy demand, and also the views of staff responsible for *supporting* students in their attempts to fulfil the demands of the curriculum. Given the number of courses on offer in colleges and the differences between sites, we soon recognised that we could not begin to cover the whole curriculum

² We are grateful to Dave Baker at The University of Brighton for pointing this out.

even in the smallest college in which we were working: we would have to sample. At first we used the term ‘surveying the landscape’ to capture this process of obtaining a broader overview of the literacy demands of studying in F.E. from multiple perspectives, with deeper probing in some places than others. This was ‘mapping’ in a very general and abstract sense, meaning nothing more specific than researching the connections between different aspects of studying in F.E. and the need to engage in literacy practices. This metaphorical use of the term ‘mapping’ to refer to the whole process of data collection and analysis undertaken by researchers is represented by the middle row of Figure 1.

WHO DOES THE MAPPING?	WHAT DO THEY ‘MAP’?	WHAT DO THE MAPS LOOK LIKE?	HOW DO THEY DO THE MAPPING?	THE PLACE OF THIS FORM OF MAPPING IN THE RESEARCH
F.E Staff	What they see as the relationship between (a) the subject curriculum and (b) Key/Core Skills	A matrix	By ticking off (b) against (a)	Our starting-point for conceptualising the object of study for Phase 1.
Researchers	The diversity of literacy demands in F.E.,	Tables, lists, diagrams, and other outputs from analysis and, eventually, Research papers	By ‘surveying the landscape’ through a variety of data-collection methods, designed to elicit the perspectives of a range of participants in F.E., and qualitative analysis of the whole data set	The overall methodology for Phase 1.
and, in two of the methods we devised: Students	Their experience of different literacy demands in different places	i) A marked-up map of the college ii) A spatial arrangement of icons	(see section on ‘Methods in Practice’ below)	Two out of several methods of data-collection involved in ‘surveying the landscape’

Figure 1. Who maps what?

As part of the larger process of ‘surveying the landscape’, we were keen to construct methods that would be sensitive to the multimodal, embodied and situated nature of the literacy demands faced by students. Guided by the aim of ‘mapping’ the literacy demand landscape of students, we were led to take decisions around methods and methodology in broadly cartographic directions. We therefore devised two methods for data collection with students which can be understood more literally as ‘mapping’ in the sense of the

term used by geographers: making two-dimensional representations of spatial aspects of experience. These appear in the bottom row of Figure 3, and are described in detail in a later section of this paper. As data came in, we became aware that ready-made maps were not easily accessible or legible without interpretation. As we were to discover, students' 'maps' of literacy demand were less 'uncovered' and more 'co-constructed' through data collection processes by researchers and respondents together. In aspects of data collection during pilot fieldwork, mapping was emerging as a shared way-finding (Pile and Thrift, 1995).

The only literal, spatial maps were those produced by the students. Of these, (i) in Figure 1, row 3 is more literally recognisable as a 'map' than (ii), but (ii) is also a map in the sense of a two-dimensional representation of space. The matrices which the F.E. staff produce are also maps in the sense of being two-dimensional representations of reality. The mapping undertaken by researchers, however, loses even the two-dimensionality of a physical 'map': what they do is 'mapping' only in the most metaphorical sense of engaging in the conceptual activity of ordering, categorising and flattening: synthesising a variety of participants' perspectives in order to produce a synoptic representation of reality.

As Edwards and Usher remind us, 'meaning is made through mapping rather than found' (2000, p138). All the participants examined in Figure 1 are not just 'finding meanings' but also 'making meanings': the teachers are making meaning out of the relationship between their subject curricula and Core/Key Skills, the researchers are making meaning out of all the data we have collected, and the students are making meaning out of the literacy practices in their lives. In this respect, we subjected our initial term 'surveying the landscape' to critical scrutiny, recognising that it carried connotations of 'finding' rather than 'making' meaning. As a result we now prefer the term 'way-finding' to refer to the process of investigation.

In this project as a whole, participants cross boundaries, with teachers and students taking on the role of researchers, teaching each other what we know about best, and everyone learning in the process. 'Mapping' in the hands of people with power can sometimes have far-reaching effects for the people or activities which are 'mapped', as we will discuss further in the next section. It is our responsibility as researchers to ensure that the mapping processes involved in the research challenge preconceived boundaries, and open up possibilities rather than closing them down. Maps, literal and metaphorical, can enable a redrawing of boundaries so that entities can be seen in a new light or so that alternative or counter interests can be served.

As the examples will demonstrate, our methods reflect concerns raised in the New Literacy Studies literature and a distinctive interpretation of how mapping the literacy demand landscape in FE might be executed using a mainly ethnographic-type approach. Taken together with the metaphorical imperative of 'mapping', we can now note that the methodology indicated degrees of acceptance of, or shifts towards:

- the visual - in response to the changing semiotic landscape (inclusive of the visual, verbal, aural, written) (Ivanič, forthcoming)
- seeing communication as multimodal (Kress, 2003)
- the spatially situated nature of experience (Massey, 1994)
- mapwork of various kinds - maps that are open to change, and emphasise readings about relationships and connections across boundaries (home/college, formal/informal learning, paper-based/digital)
- the idea that the research process builds the capacity of respondents and FE-based practitioners
- seeing our own work as researchers as both map makers and readers.

We do not have space in this paper to provide detail on all the methods we used for the whole process of mapping literacy demands. In the main part of the paper we therefore focus on the ways in which we collected data with students, both through the more explicitly cartographic methods mentioned in row 3 of Figure 1, and through other methods of data collection which are sensitive to the multimodal, situated and embodied nature of literacy demands. First, however, we examine theoretical issues raised by using the term 'mapping' both literally and metaphorically to describe research methods.

Whither Maps? Theoretical insights into the affordances and risks of the 'mapping' metaphor for research methodology

Mapping is a popular way of framing an intended research strategy. The notion of mapping provides an umbrella for a broad range of practices and forms of representation. For example, concept mapping has a long established pedigree. More recently, the notion of social cartography has found some purchase in the social sciences. Mapping has also been an important concept in branches of post-structuralist writing, to which the spatio-temporal ordering of practice is critical. Here, mapping and map reading can be understood as a more unstable dialogical process of connecting time-place and practice together. Each mapping practice provides different interpretations and therefore maps of the terrain to be investigated. In principle then, the notion of mapping can open up different terrains of multiple perspectives rather than a single map of the terrain.

We are not the only ones to attempt such a thing: from a quick scanning of book titles it would appear that almost anything can be 'mapped' these days - the mind, the body, human subjectivity, concepts in philosophy, work processes, the human genome, social networks. Centrally, mapping involves the conceptual activity of ordering, categorising and flattening through boundary marking (or making) with sometimes far-reaching effects for the people or activities. A map-like model may appear to be a material artefact or assemblage of artefacts that represents a landscape in the traditional way, reduced in scale and depicted as though viewed from overhead: a map made with a god's eye view. However, in the 'home ground' of map making - geography - Dorling and Fairbairn (1997) remind us that maps are not neutral or always drawn to the same recipes. They take a look at how diverse approaches to map making set out to control as well as understand the world. The main critique of this mainstream approach to mapping is that

not only are maps providing a subjective view of reality but that they pretend not to be or are read as if they are objective and final.

Our approaches adopt a relational and cartographically informed epistemology and methodology.

A conceptual shift, 'tectonic' in its implications, has taken place. We ground things, now, on a moving earth. There is no longer any place of overview (mountaintop) from which to map human ways of life, no Archimedian point from which to represent the world. Mountains are in constant motion. So are islands: for one cannot occupy, unambiguously, a bounded cultural world from which to journey out and analyse other cultures. Human ways of life increasingly influence, dominate, parody, translate, and subvert one another. Cultural analysis is always enmeshed in global movements of difference and power. (Clifford, 1986, p 22)

The challenge for us is to determine how best to collect, analyse and represent data that captures the movement and flows of literacy practices in people's lives. In the LfLFE project, we are aware that researcher-drawn maps may appear misleadingly objective, and that a single uncontested two-dimensional Euclidean map might obscure respondents' situated experience. In what we had somewhat uncritically referred to as 'surveying the landscape' of literacy demands in F.E., we are acutely aware of the need to exercise caution against creating representations of a literacy landscape from 'overhead', against constructing rigid boundaries that are immutable, and against the danger of treating maps as objective or final. We seek multiple perspectives, in order to view the terrain from within, and we treat our research products as partial in the sense that they represent our take on reality from 'somewhere'. Our map tracings strive to bring to light connections and relations in time and space. They also have the potential to be critically revealing of the processes of enclosure, partitioning, coding and ranking (see Elden on Foucault, 2001) of literacy demands, respondent data and our own discourse.

There are multiple aspects to working out the nature of the mapping practices in which we are engaging and the types of map which emerge. To extend our geographical metaphor, what are the horizons of our efforts? How do we attempt to map the mappings of others, when, as Pile (1997, p 30) suggests, 'we occupy many places on many maps, with different scales, with different cartographies, and it is because we both occupy highly circumscribed places on maps drawn through power cartographies and also exceed these confinements, that it is possible to imagine new places, new histories ...' One of these new places might be a pedagogic space for further education where teaching and learning are less 'bounded practices' (Edwards and Usher, 2000, p 72) and are more interconnected with the home, the street, the workplace and the multimodal semiotic landscape. Reflecting on how research can be seen as 'mapping' might help in drawing this out.

In the next section we describe some of the methods we used to achieve our aim of 'way-finding' through mapping literacy demands, mindful of the theoretical considerations regarding map-making and map reading outlined here.

Detours and Staying 'On Track': Data Collection Methods in Practice

In our effort to triangulate our approaches, we devised and enacted a range of data collection activities that offer different perspectives on the same substantive topic: literacy demands. We devised methods that address how demands are experienced in space (and time) in particular contexts and locales. The range of data collection methods included questionnaires, field-notes generated by researchers, interviews with students, interviews with staff, documentary evidence and focus groups with college-based researchers, student-taken photographs and researcher-taken photographs.

We started the data collection process by undertaking mini-ethnographies of the colleges as literacy sites. In order to attend to the visual, material and spatial characteristics of literacy practices in the colleges, researchers took photographs of the communal spaces and made field-notes after each visit. Photos such as Figure 2 below allowed us to see how literacy artefacts were being used to regulate the use of space according to social categorisation of college participant, although people are oddly referred to by their dress rather than by their social role or even by their subject area.



Figure 2:

In order to gather participants' views, we agreed to obtain fifteen sets of data from each college: five interviews with a selection of subject teaching staff, five with other specialist staff and five with student groups (sixty interviews/focus groups in all), in order to 'survey the landscape' of literacy demands from three perspectives.

Space permits taking a closer look only at the methods of data collection aimed at eliciting students' perspectives, but staff were key respondents too. Teaching staff and other specialist staff were interviewed at each of the four college sites. Interviews with teaching staff were semi-structured with a conversational focus on the teachers' planning of a particular course. Many teachers responded to our request to show examples of their planning materials, including term plans and individual lesson plans, and several teachers

also provided examples of course log books and student work. To an extent, staff interviews around the documentation associated with their course offered an idealised mapping of the literacy demands of the college or curriculum area, surveyed 'from a distance'. These 'maps' of the formal, intentional curriculum-based literacy demands were sometimes contrasted with the staff's experience of teaching the course in practice, which came out in the more open parts of the interviews.

For the collection of data from students, we used a suite of approaches designed to capture data in different ways. Our efforts were not targeted at conducting an exhaustive and totally comprehensive listing of all the literacy demands faced by students. From a social practices perspective, "in order to understand literacy it is important to examine particular events where reading and writing are used." (Barton, 1994: 37) Building upon Heath's concept (1983), David Barton suggests that literacy events are the first basic unit of analysis for a social practices approach to literacy, and that they are a constituent of literacy practices. In order to focus on students' perceptions of the literacy demands of Further Education, we decided to use various ways of depicting literacy events as a stimulus for students to talk about literacy demands and their literacy practices in the college. As Hamilton (2000, p 18) explains, "visible literacy events are just the tip of an iceberg: literacy practices can only be inferred from observable evidence because they include invisible resources, such as knowledge and feelings; they embody social purposes and values; and they are part of a constantly changing context, both spatial and temporal".

One approach involved presenting students with a floor plan of their college campus and inviting them to describe where they went and what they did there (initially in general and thereafter in terms of reading and writing in particular). The idea here was to capture data on literacy events (and the literacy demands inherent in them) in different locations - both classrooms and other college environments (hallways, notice-boards, vending machines, dining halls). After initially orienting them into a general reading of the plan and checking with them that they were comfortable with finding the different zones of the college, students were invited to mark which places they accessed during their average college week. There was considerable discussion and laughter about deciding where they went. Next we asked them to write on 'post it' notes what reading and writing they did in each of these areas (see Figure 3).

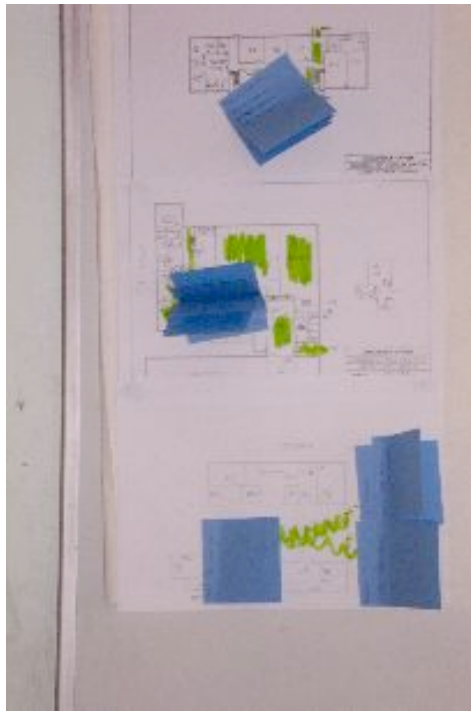


Figure 3: An annotated 'map' produced by two male Health and Fitness students.

The annotation process provided an opportunity to discuss coursework in terms of literacy demands and practices based on events that were locatable in time and space. One of the main things that the students noticed was how much time they spent in the refectory and that they did quite a bit of writing there. The refectory was where they completed homework, checked planners, timetables and deadlines. They also met up there before going to outside buildings to participate in an outdoor class activity. It was here they also read newspapers, sent texts to friends, and read handouts. The activity also revealed - to the surprise of the students themselves - that they had writing to do in every class. One of the respondents didn't have a computer at home so they used the learning centre while another respondent worked mostly at home. Other responses, which are still under analysis, potentially reveal their understanding of the relationship between their communication class and the need to write reports for in their vocational area. Some students and researchers, however, found the floor plans constraining and thought that their responses would have been more wide-ranging had they not been bounded by the spatial representation.

Student interviews took a different format from staff interviews. In keeping with our theoretical commitment to gaining many perspectives on the literacy landscape of F.E., rather than seeking to map from a god's eye view, we decided that the photographic depiction of literacy events should be created by students taking disposable cameras around the college with them prior to our interviewing them. This collaborative approach to research has similarities to Hodge and Jones' (1996) research with Welsh and Muslim communities, and emulates their use of photographs as a catalyst for gathering further

details of the literacy event represented in the photo in collaboration with the interviewee. The methods build on image-based research practices that have a growing currency in the social sciences. 'Photo-journey' has been similarly employed in geographical research to collect 'self-directed' photographic data about people's local environments (Aitken and Wingate, 1993). Photo elicitation or the photo-interview (Collier, 1967) is a technique that has been first developed in the field of visual anthropology but is now used more widely in other forms of sociological and psychological research (Mannion, 2003; Mannion and I'Anson, 2003). These approaches are becoming popular with researchers working with student respondents because it provides a way of addressing the imbalance in power between researcher and researched while offering a useful way of understanding the embodied situated and spatial experience of the respondent's world.

Because our theoretical focus is upon literacy events and practices, we encouraged students to photograph interactions with texts, rather than just photographing notice boards, fire signs, and text-books for example. The photographs were then used as stimuli for conversation in the interviews. Some of these interviews were carried out within groups of students, other students preferred to be interviewed individually. The majority of students had clear ideas of what they had been doing and talked about reasons why they had elected to photograph certain texts or certain interactions with texts: "I think that was from a politics class, but I took it because I usually look at the poster in my room, ... , so that's why I just took that one." The conversations then normally moved to a discussion of how the students interacted with or used the texts: "That's just a picture of my friend Laura, who's going to come here today and she's just reading the documents that we were given in class that day. I think it was on answering exam questions and I think it was the Lloyd George extract, what we used in that".

The students interviewed for this project are not passive recipients of the FE environments, and the use of the photo-elicitation method provided a useful arena in which students could evaluate and critique the literacy demands they faced. Sometimes these evaluations were positive as in the following extract from a conversation with two mature students who had photographed a notice board (see figure 4 below).



Figure 4.: Checking the exam timetable

Student 1: Yeah, I took a photograph of [student's name omitted] there outside our classroom with all the examination dates up on the wall there, where we had to get our dates from.

Interviewer: It seems like there's an awful lot of information on that one particular sheet. Did you find it quite hard, or do you find it quite hard or easy to find your own examination times there?

Student 2: On those at the top, yeah.

Interviewer: Right.

Student 1: But they were in alphabetical order, so it was well laid out and probably done by [tutor's name omitted] so it would be precise, so yeah. They're already stapled to the notice board so no-body can sort of remove them.

Some students reflected on the reasons for their responses to different literacy demands around the college:

Interviewer: Do you take notice of these when you see posters with information around the college?

Student: Sometimes, but sometimes we don't really notice it.

Interviewer: Which ones would you notice? What would make you notice a poster?

Student: We look at the ones with big writing on. Not really, we look at the ones with small writing. We look at the pictures.

And some reflections included critique of the ways in which students were expected to interact with texts in the college:

“It's awful. I took that. I was trying to take a photo of the Health and Safety laws. It's in the wrong place over there; you can't really notice it that well.”

The focus on literacy events rather than literacy texts allowed us to begin to gain insight into how students negotiate the literacy demands of their colleges and how they interact with the landscapes of their college, their courses, and their identity as a student in those colleges. The use of photographs in interviews led to conversations about the literacy events and literacy demands associated with texts such as NVQ logbooks, the use of the library, the internet and text messaging. College-based researchers found it fascinating to listen to literacy from a student perspective and find out what interests and motivates them. In some cases it became apparent that students do not read something that tutors might consider very important. Other data demonstrated that students might have no problem sitting and reading a book on their hobby or interests (for example, astrology) but when it came to assignments for college, motivation sometimes waned.

In another college, we took the mapping imperative quite literally with respondents being facilitated in focus groups through a participatory map-making task. To do this, we constructed small post-it sized icons of different types of text, media and modes of communication related to reading and writing: computer, pen and paper, folder, diary, etc. (see figure 5).



Figure 5. The icons provided before selection

Considering an average week in their lives as students, they selected icons they wished to discuss or made alternatives if no icon represented their ideas. The tasks involved pairs from the same courses selecting and configuring these representative text types. In doing so, the icons functioned as loaded reminders for respondents of stories about the literacy practices and literacy demands surrounding them. The 'post-it' type icons combined with respondents' own terms to represent texts, modes and media of various kinds and the associated literacy demands and practices. As the process ensued, respondents were invited to talk about their selections and their placing of icons. Salient parts of this interaction and discussion were photographed, recorded and transcribed. They also repositioned the icons into sets - related groupings of icons that made sense together for them (home activities, computer-related, etc) (see Figure 6).



Figure 6. Modifying their maps.

One pair of students put the activities they did both at home and at college into one group, and separately grouped things they did solely at home, at work or at college:

S(M)³: [T]here's a lot of things which I do at home and college ... papers, using the computers, eh using CDs, listen to music mainly, [and using] the calculator's 'cos we're doin' an accountancy course, em diaries taking notes and [reading] college books.

Asking open-ended questions about the mapping of these icons revealed how these students used diaries to manage their lives as a whole. Their talk about these diaries and the literacy practices surrounding them indicated that there were literacy demands associated with tracking one's use of time on paper as a college student.

S1(M)⁴: I've got a diary [...] we've got a diary for college... different dates

I: You do that too?

S2(M): Yeh [we have] different deadlines to meet an' the different classes so...

Interviewer: Is that something they gave you or something you bought

S2(M): I bought it....

Interviewer: And everybody has one?

S1(M): Most of the class has one....we got a wee one at the beginning of the year but I bought a bigger one 'cos there's that much happening.....so

Interviewer: And do [staff] keep an eye on it or do you

S(M): No, no

³ S(M) denotes male student.

⁴ S1(M) denotes the first, S2(M) another male student in focus group.

Interviewer: It's private to you?

S(M): [It's] personal yeh....we can have stuff... I've got stuff that's happenin' outside of college as well as in it...

Interviewer: Yeh, right.

S(M): To keep me right 'cos I get quite forgetful now.

For these students some literacy events and their associated demands (like reading the newspaper, sending e-mail to friends and doing coursework of various kinds) happened either at home or college. Their icon 'maps' revealed this and their explanations supported the idea that the literacy events and demands associated with 'home' and 'college' were not so much bounded or separated from each other. Through the literacy practices of keeping a diary, being on the internet, using e-mail, 'home space' appears to 'reach into' college space. Conversely, the literacy demands and practices of college life appeared to infiltrate home life (see Jacobs reading of Heidegger, 1996, p 381). In fact, as their course progressed, these students noted that the activities related to coursework were increasingly displaced into the home.

Respondents were then asked to place the icons on a continuum from 'demanding' to 'less demanding'. For both pairs of students, the literacy demands of the college were perceived to be most demanding. However, when questioned, they felt that highly demanding literacy events were what they expected of being on a 'good' course. This was interesting since emerging data from interviews with staff indicated many tutors worked hard to make things easy and accessible for students.

When asked to reflect on the focus group process, one student said that it made it feel more 'open' and that it was easy to talk about their experience. They also felt comfortable with the map work because they could do something 'straight away' with the icons, which allowed them time to think. The icons also gave them some ideas to catalyse their thinking in the direction of literacy practices and demands. In focus groups, they agreed it was useful to see how others' maps worked out and they said they were interested in them.

All three approaches take into account the idea that literacy demands are likely to be differentiated in terms of space, modality and their situation/contexts. In addition, the sorts of data emerging and our early analysis of them acknowledge the situatedness and partiality of mapping as an exercise. Photographs taken by students revealed different kinds of data from those taken by researchers; floor plans focussed more on college life beyond the classroom while icon mapping took a more holistic approach. We like to think we have foregrounded the idea that multiple readings of the same literacy events and practices across diverse times and spaces are possible and that different research methods allow for this difference to emerge. The methods used reflect a desire to engage with respondents in various types of map-making; research can be more than the finding of a single map for 'a' unified territory. Conventional one-to-one interviews with staff seemed to encourage many respondents to present the view that literacy is something students were 'in need of' - a deficit model. Unsurprisingly, perhaps, staff did not appear to be in a position to understand in much depth students' situated experiences of literacy demands and practices connected to home and work. With other approaches, students

appeared to become aware that their responses to literacy demands were quite diverse, multimodal in nature and traversed many spatial boundaries. In constructing these maps of literacy demands, we noticed that the sorts of data that emerged were quite dependent on the approach taken and revealed different constructions of what it meant to be a student, to face and experience literacy demands, and what it was to learn. The use of multiple methods also revealed that literacy demands were differentiated in terms of what was formally intended (in curricular documentation), what was facilitated by tutors in classrooms, and what was experienced by students within and outside of college environments.

Data analysis as mapping

As indicated in the middle row of Figure 1, the term ‘mapping’ can be applied not only to some of the forms of data collection used on the project, but also to the processes involved in analysis. As researchers, we were ‘mapping’ what participants said, and what we observed about literacy demands and literacy practices onto different spatial and conceptual categories. Referring these processes, too, as forms of mapping means that we need to subject them also to the critical scrutiny generated by the theoretical insights outlined above.

Among other analytical processes, we developed a matrix which mapped dimensions of literacy onto different aspects students’ lives at college, in order to provide an initial coding scheme for the transcripts of our interviews. This matrix was potentially a form of boundary marking and boundary making. Applying the mapping metaphor to this research tool led us to recognise its provisionality and its potential to close down meanings rather than open them up. With this in mind, we treated the process of coding as a means of questioning the categories and the relationships among them: we were alert to ‘a certain slipperiness in these categories’ (Richard Edwards, e-mail communication). Mapping data to our analytical framework led us to identify subtler distinctions within our categories: to elaborate the detail of the map. Inter-rater reliability sessions showed us the variability in how we interpreted and applied the analytical framework: each researcher’s mapping was to some extent subjective, partial and interested.

Mindful of the risks of accepting a map as the single true account of a phenomenon, we recognised the possibility of our analytical framework blinding us to other interesting things in the data. Discussions led us to generate further possible sub-categories, questions, connections, and ideas through ‘open coding’, that is, looking for ‘emergent themes’. This broadened out the aim of coding to encompass refining our understanding of our object of study: ‘the literacy demands of studying at college’, collecting telling examples of their multifaceted complexity in real experience, and using the coding process as a starting-point from which to build our theoretically informed and informing analysis. The coding process itself was a form of way-finding and exploration of conceptual and theoretical space.

Research as Mapping: Consequences of taking theory seriously

Taking critical perspectives on mapping seriously has implications for both data collection and data analysis. In not taking the concept for granted, one aspect that we surfaced was a diversity of views on the meaning and significance of mapping as a research strategy. As we have seen mapping was initially taken to mean a listing of what teachers took to be the demands of the intended curricula they were delivering. During data collection, the term 'mapping' was used quite literally to refer to specific data collection methods which involved making map-like artefacts. Later, mapping became more process of way-finding where literal and metaphorical maps were read or created, and functioned to construct new and sometimes inconsistent depictions of experience from different perspectives. The discussions reflected in this paper have already pushed the LfLFE project on in surfacing the horizons of our own perspectives on maps and mapping.

To summarise the issues informing our methodology which are raised in this paper:

- The creation of matrices F.E. staff, and by researchers in the course of data analysis, is 'mapping' in the mathematical sense, whereas our 'map-making' data collection processes are 'mapping' in a geographical sense.
- Viewing our object of study (literacy practices) as multimodal, embodied, and situated in time and space, is consonant with research methods which pay attention to the spatial and material.
- Mapping is best understood not as the finding, but as the making of meanings.
- Mapping as a metaphor for research foregrounds the making of meanings by ordering, categorising, flattening and by making connections and relationships.
- There is a danger in mapping of assuming a 'God's eye view', a view 'from the mountain-top'.
- Maps (literal or metaphorical) are not neutral, objective or final, but subjective, provisional, interested, and potentially forms of control.

The consequences of these considerations for mapping as a research methodology are that as researchers we should:

- aim for multiple perspectives: different maps of the same terrain;
- envisage our research efforts more as 'way-finding' than as 'surveying the landscape';
- recognise that, as researchers we not only read other people's maps, but also make maps for others to read;
- be wary of boundaries drawn by people with power;
- aim to reveal and contest processes of enclosure, partitioning, coding and ranking;

- exercise reflexivity as regards our own research processes of map-reading and map-making.

The mapping metaphor has drawn our attention to some of the more subtle understandings we work with as researchers and enabled us to see our work in a new light. The notions of surveying landscape and way-finding capture different aspects of our intentions and purposes as researchers. Way-finding relates to the desire to triangulate methods in order to confirm or disprove other versions of reality but it also relates to a sense of the emergent and undiscovered 'around the corner'. Static maps offering one perspective cannot easily capture the changing nature of landscapes; a static understanding of 'horizon' will not suffice.

The horizon of the present is being continually formed, in that we have continually to test all our prejudices. ... In a tradition this process of fusion is continually going on, for there old and new continually grow together to make something of living value, without either being explicitly distinguished from the other. (Gadamer 1979, p 273)

But we must not forget that we as data analysts are involved in other forms of mapping that data in order to make sense of it via an overarching 'survey of the landscape' model. By one reckoning, the resulting 'map' which is emerging from this process of data collection and analysis will be drawn at some point in time by us as researchers. It is likely not be a two-dimensional map of a material topography; it would only be a 'map' in the most metaphorical sense: a survey of the landscape of 'literacy demands' in colleges. Yet even this 'map' will be seen as a malleable guide for potential readers because horizons are always shifting - our hope is that better way-finding is engendered through our map which will always be there to be read and used by explorers.

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