Literacy UKLA

Building the mobile hub: mobile literacies and the construction of a complex academic text

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Abstract

This paper contributes a definition of *mobile literacy*. This is worthwhile because although mobile, internet-enabled devices are increasingly prevalent in many people's lives, mobile literacy appears to be under-theorised and lacking definition. After giving an overview of the scale and nature of mobile device use, the paper develops the definition through building on an existing body of work which seeks to define literacies, digital literacies and mobile learning. The definition takes account of the mobility of technology, of learners, and of learning. A systematic multimodal analysis of a complex undergraduate text, in the form of a conference-style poster, is then undertaken in order to exemplify the definition offered. The analysis attends to both the semiotic resources exploited by the text's author and the wider context the text is created within. Interview data complements that constructed through analysis of the text itself. Combining these two data sources reveals the ideational, interpersonal and textual/organisational meanings communicated by the text, and how mobility is a contextual factor which is fundamental to the literacy practices employed by the author to convey these meanings.

Key words: mobility, multimodality, technology, learning, semiotics, mobile literacy, writing, academic writing, text production, digital literacies

Introduction

Mobile, internet-enabled devices have insinuated their way into our lives incredibly quickly, yet we rarely stop to consider just how remarkable they are. Twenty years ago, all of the main functions we now find on just about any mobile phone or tablet computer required their own dedicated device, if indeed an equivalent existed. Mobile devices now encapsulate versions of the telephone, personal stereo, TV, camera, video camera and encyclopaedia and much more, in a package smaller and lighter than a pack of playing cards or thin paperback. These affordances are partly why smartphones have rapidly become commonplace in education and in many people's lives (Byrne-Davis et al. 2015). We might imagine that educators would welcome mobile devices into their classrooms, given the way they allow people to access, record and share information, interact and express themselves. Some have (Pachler et al. 2010), but mobile devices have not received a uniformly warm welcome. Set against their affordances are concerns that mobile devices are distracting, promote superficial learning, erode students' ability to concentrate and teachers' control over the classroom and entrench socio-economic divisions. There is nothing new in moral panics about technology or even literacy. Plato allegedly fretted about the deleterious impact of reading and writing on people's minds (Freebody, 2014). The Church tried to suppress the technology of reading after Gutenberg invented the printing press, and since then, there have been moral panics about the impact on young people of cinema, radio, television and 'video nasties' (Crystal, 2008 cited in Pachler et al., 2010). Most recently, concerns have been expressed about the internet and social media, with many schools, colleges and universities either banning or heavily restricting students' use of these technologies — though students are adept at circumventing such manoeuvres.

The scale of smartphone use in the UK and in many other countries (Alrasheedi et al., 2015; Sevillano-García and Vázquez-Cano, 2015) is indeed striking, as is the speed with which these devices are usurping desktops and laptops. In the UK, the most recent figures (Office of Communications, 2016) indicate that 90% of 16–34-year olds own a smartphone. Half report checking their smartphones within 5 minutes of waking up (Office of Communications, 2015). Smartphones have become internet-users' preferred means of access in the UK: 36% of all users and 56% of 16–34-year olds list the smartphone as their preferred device. The ubiquity of these devices suggests that people are using an array of literacy practices to navigate the online world and manage their lives and learning. Urry (2007, p. 46) argues that people are intricately networked with their machines, software and texts to the extent that mobile phones are prosthetics in which one "carries one's life in one's hand". The UK communications regulatory authority Office of Communications (2015 & 2016) claims that Britons now live in a 'smartphone society'. The proliferation of these devices suggests that they are playing a significant and increasing part in many people's lives. Yet despite all the reading and writing that surely makes use of smartphones and tablets, mobile literacies appear to be under-theorised and lacking definition (Frawley and Dyson, 2014; Janks, 2013;

Walton, 2014). Therefore, in this paper, I offer a tentative definition of mobile literacies, building on previous work defining literacy, literacies and mobile learning. I present a comprehensive multimodal analysis of a complex academic text, recently produced by an undergraduate student, to illustrate and justify this definition. The definition thus pertains most obviously to higher education, although it may have some relevance in other contexts. With this paper, I hope to make a modest contribution to our understanding of contemporary and emerging literacy practices. The paper may therefore appeal to both researchers and teachers interested in such practices.

Defining mobile learning & literacies

Rates of technological growth and change contribute to the difficulties of trying to define mobile learning. Alrasheedi, Capretz and Raza (2015, p. 258) assert that, in higher education, "m-Learning is characterized by its anytime anywhere learning capacity and use of multiple media functions like pictures, videos, text, and voice". However, Wali (2008) usefully points out that such definitions emphasise technology at the expense of learning. In arguing for greater attention to social practices, Wali (2008, p.221) defines mobile learning in higher education as "learning that occurs as a result of pursuing learning activities that are directed towards a given aim in multiple contexts". This definition seems somewhat tautological and very broad — for example, starting a hand-written essay in the library and then finishing it at home would count as mobile learning, which does not seem to capture the spirit of the concept. More satisfactory definitions attempt to address the meaning of mobile learning for the learners, including ideas like interactivity, autonomy, spontaneity and creativity (Traxler, 2009). They focus on *mobility:* El-Hussein and Cronje (2010, p. 20) offer a tripartite definition of mobile learning in Higher Education (HE) as "any type of learning that takes place in learning environments and spaces that take account of the mobility of technology, mobility of learners and mobility of learning". Mobility of technology relates to the portability and connectivity of devices like smartphones. Mobility of learners refers to learner-centric activities in which learning is nomadic; it can take place anywhere and anytime (Abu-Al-Aish, 2014). Mobility of learning refers to institutional moves to facilitate learning in individual contexts rather than in "the rigid outlay of the traditional classroom or lecture room and the computer laboratory" (El-Hussein and Cronje, 2010, p.19). Of course, mobility itself is not new. Medieval scholars travelled large distances to study, and books are portable. What is significant for education is the shift from transmissive models and definitions of learning to scenarios in which learners operate in and across ever-changing contexts and spaces (Pachler et al. 2010). Urry (2007) views this as part of a broader sociological turn toward mobility and away from static, fixed, asocial analyses of economic, social and political relationships. In this view, learning and literacies are not merely 'situated' in context: learners are nexus, "actively networking learning resources across space-time" (Leander et al. 2010, p. 336), continually constructing contexts through discourses as they make meaning on the move (Davies, 2014).

Despite the near ubiquity of smartphones and tablets, it is surprisingly difficult to find a satisfactory definition of 'mobile literacies'. This stands in stark contrast to the substantial body of work concerned with defining and theorising 'digital literacies' and 'critical digital literacies' (c.f. Merchant, 2007). The meanings of 'mobile literacy' and 'mobile literacies' seem to be taken as self-evident. For example, a search through the *Literacy* archive using the search term 'mobile' and the parameter 'All Text' returns 40 research articles. Although they discuss mobile learning and literacies, none of them is explicitly concerned with definition. In this paper, I therefore contribute a tentative definition of mobile literacies pertinent to higher education, the context from which my empirical evidence is drawn.

To begin defining mobile literacies, it is perhaps helpful to start by differentiating *literacy* from instances where the term is used as a synonym for *skill*, as in phrases like *computer literacy* (Buckingham, 2016). Merchant (2007) reminds us that literacy is understanding how to manipulate the writing-symbol system and cites a definition from Kress (2003, p.23): "Literacy is the term to use when we make messages using letters as the means of recording that message". Merchant (2007, p.121) then extends Kress's definition to include "other symbols such as icons, pictograms and numbers" as well as various 'visual features' characteristic of digital texts. Subsequently, he defines *digital literacy* as manipulating and interpreting written or symbolic representation which is mediated by digital technology. More recent work has recognised that mobility offers possibilities for different kinds of literacies, shaped by communication forms which are richer, more diverse and more flexible than before and supports multimodality, linguistic innovation, remix, playfulness, participation and connection in the production and consumption of texts (Burnett and Merchant, 2015; Lankshear and Knobel, 2016; Merchant, 2013; Williams, 2014). From here, we can bridge into attempting to define *mobile literacies*.

As we have seen, *mobile learning* comprises mobility of technology, learners and learning and may be characterised by things such as interactivity, autonomy, spontaneity and creativity (Traxler, 2009). *Literacy* can be defined as the ability to understand and manipulate culturally located symbol systems in the creation and consumption of texts. *Mobile literacies* can thus be tentatively defined as

> *"The use and interpretation of written or symbolic representation in texts and practices mediated by mobile digital technologies".*

There is nothing particularly radical about my definition; it is merely an amalgam, and logical extension, of definitions of mobile learning and of literacies extant in the literature. Nevertheless, it does express the essence of mobile literacies and avoids some of the definitional pitfalls noted above: it is not tautological, does not privilege devices over practices and is specific to literacy. It privileges the agency and activities of the learner rather than technology per se. In attending to written or symbolic representation in texts and practices, it accounts for the aforementioned features of multimodal contemporary literacies and, again, foregrounds meanings made by learners. The definition explicitly pertains to mobile digital devices and thus acknowledges the mobility of learners, learning and devices.

Such definitions beg the question of what kinds of mobile learning would not involve mobile literacies, but perhaps mobile learning is best characterised by degrees and types of mobile literacies. For example, architecture or design courses in higher education might emphasise graphic representation more than typographic, although there would still be written elements such as notes, annotations and reports; in contrast, writing an essay on a smartphone or tablet might foreground typographic literacy. Producing other kinds of artefacts, such as the academic poster analysed later in this paper, may require a more even balance of typographic and design elements.

Mobility in a 'static' text: building the mobile hub

In the remainder of the paper, I undertake a comprehensive multimodal analysis of one literacy artefact in order to exemplify the conceptualisation of mobile literacies I am offering, in order to show how my definition might be relevant. I employ the analytical framework provided by Jewitt (2013), derived from Halliday's (1978) theorisation of language as a social semiotic system. This framework is appropriate because it takes account not only of the modes, materiality and semiotic resources people have at their disposal — the actions and artefacts — but also of the context in which meaning-making happens. As such, it recognises wider social and cultural factors that shape the production and consumption of texts. Attention to context helps us better understand the way the signs and designs used by sign-makers are both motivated by the sign-maker's intentions and influenced by broader social, geographical and temporal–historical conditions (Bezemer and Kress, 2015). Such multimodal analysis helps develop insight into the ways people orchestrate semiotic resources (Kress, 2010) and hence reveals three interconnected levels of meaning communicated by texts: the ideational, the interpersonal and the textual/organisational (Halliday, 1978). Ideational meaning refers to the conceptual content of the text; for example, the processes and events described. Interpersonal meaning refers to how people choose to represent relationships between themselves and the people they are trying to communicate with. Authors may, for instance, deploy particular grammatical or rhetorical devices to try and manipulate the sense of distance or closeness to them readers feel. Textual/organisational meaning refers to how authors use features such as space and layout to create characteristics like cohesion and structure. In Jewitt's (2013) translation of Halliday's (1978) theorisation into an analytical framework, each of these three categories of meaning-making is applied to each semiotic mode in order to determine what can be meant or done with a particular set of semiotic resources. A systematic and multilevel approach to analysis like this is required in order to fully appreciate the mobility of technological devices, the mobility of learners and the mobility of learners, since this is the context in which mobile literacy lives. Hence, I have used Jewitt's (2013) analytical framework for this study.

The text I analyse takes the form of an academic, conference-style poster (Figure 1). It was produced by an undergraduate, who I shall refer to as B, as an assignment worth one third of his mark for the final year of his degree. Wilbur (2010) observes that university students are an under-researched population in the field of new literacies and comments that this is particularly surprising given that they are often enthusiastic, early-adopting technology users, playing an important role in creating and disseminating new literacy practices. The methodology can thus be conceived of as an exploratory case study (Yin, 1993), using a single student as the basis for a multidimensional explanation of practices (Flyvbjerg, 2011) which are probably increasingly prevalent in HE yet which are not well understood by teachers or researchers (Ross, 2016). This study came about when B revealed to me in conversation after the conclusion of his studies that he had produced his poster and written almost all of his undergraduate dissertation, on his smartphone. At times, he used his tablet and only very occasionally his laptop. B consistently achieved high grades for his work, his poster and dissertation both warranting First-Class marks. Intrigued and admittedly somewhat baffled as to how somebody could produce such high-quality academic work largely on a smartphone, I arranged two interviews with B in order to learn more about his way of working. I planned these as semi-structured interviews, but in practice, B had so much to say and show that it would probably more accurate to use the term 'purposeful conversations' (Farnell, 2015, p. 57). The first of these interviews took place in my office and, the second, at his suggestion, in the university library where B would often go to work and reflect. Both lasted approximately half an hour and were video recorded, as B wanted to demonstrate how he used his devices. Together, the interviews yielded 10,531 words of transcript which were systematically analysed using the procedures advocated by Charmaz (2006) for generating substantive categories. The analysis of the interviews thus helps

Figure 1: B's poster. *[Colour figure can be viewed at wileyonlinelibrary.com]*

illuminate much of the context surrounding and the motivations shaping B's orchestration of his poster. This complements multimodal analysis of the actual printed artefact and thus helps take account of the factors identified as salient in Halliday's (1978) theorisation and Jewitt's (2013) framework.

Inevitably, given the assessment requirement to produce an A1 printed poster, B's design appears to us as a static text. B's testimony belies this impression. Analysis reveals that the interrelated mobilities of technology, learner and learning are central to B's manipulation of graphic and typographic semiotic systems during the design process. The work in fact freezes movement into a solid structure (Simmel, 1997 cited in Urry, 2007, p. 20), eliding the mobilities in physical space, conceptual space, social space, and of technologies and information inherent in its production (Pachler et al. 2010).

To understand the poster, it is necessary to be familiar with the brief. The brief was to design an A1 poster which would

1. help people understand what 'inclusive education' means (philosophy & principles) in a hypothetical organisation the student pretends to represent;

2. explain relevant concepts in terms an unfamiliar audience would understand; and
3. show how specific inclusive classroom practices are research-informed — again, in terms an unfamiliar audience would understand.

This assignment is given to final-year students studying for a Special Educational Needs major on a Combined Honours programme. The curriculum for this major is underpinned by the discipline of Disability Studies; hence, the focus is on inclusion. It is a challenging assessment, not only because it effectively requires students to distil 3 years of learning onto a single sheet of paper, but also because successful posters need to be able satisfy two audiences: the course tutors and an unfamiliar audience (The posters are put on public display on campus for 1 week after submission, and tutors also make judgements about the appropriateness for a general audience as part of the assessment criteria and grading).

B's design features a large, central heading of 'Interdependent Community Hub', the name for B's hypothetical organisation. The central heading communicates B's intent of reconceptualising education. The size, colouring, shadowing and orientation of the title work together to emphasise this intention. The text is horizontal, although the word 'Hub' is offset on an angle, pointing slightly up towards the top right. The text is in blue and pale yellow colours which soften the quasi-military effect of the stencilled lettering. A shadow effect helps the lettering stand out. The section headings use the same font but in white. The body text and references are also white, although the heading 'References' is in pale yellow. The background for the text is a photograph of a brick wall which appears to be more brightly lit in the centre and darker towards the edges, as though a spotlight is shining on the middle of the poster. The main text is in Helvetica font, arranged in blocks and the pattern of which echoes the bricks beneath. The elements in this ensemble (Jewitt 2013) are orchestrated to attain particular effects; the manner of this orchestration is characterised by mobility, as I shall now go on to demonstrate.

B values the mobile, haptic materiality of his smartphone in making meaning; he spoke of the affective importance of manipulating the text by feeling the screen, tapping, swiping, pinching and so on. This embodiment (Davies, 2014; Ehret and Hollett, 2014) or evidence of the "sensuous constitution of humans and objects" (Urry, 2007, p. 9) enables him to achieve the desired effects very quickly using a combination of apps to dictate, type, copy-and-paste and edit text and images from various sources. The way these apps synchronise automatically across all of his devices highlights the importance of mobility of technology, learning and of himself as a learner in shaping B's literacy practices: he works in multiple locations including the lecture theatre, library, on public transport and at home:

B: "I decided to put together a document on it and I would highlight different areas … if I was on the bus or if I was in the lecture I was able to copy and paste it...even over wireless do it just open it ... ".
Interviewer: "Sorry can I just interrupt you for a second so does that mean that in a lecture you might actually be doing something on your phone that later comes into the finished article? You might actually be working on your assessments in the lecture?"
B: "Always yeah ... because I hate the idea of thinking I'm going to work between three and four on this project so I sit down in front of a desk I open my computer and then I work ... ".
Interviewer: "So do you never have a time where you sit and do nothing but work on an assignment for a focused period? "B: "No I'm always doing it I'm always on me phone... unless I'm going for a run I always have my phone on me".

This ability to work anywhere, anytime combines with the haptic materiality of B's smartphone to enable him to communicate his vision of a radically reconceptualised urban education environment which privileges notions of community and learner interdependence over individualistic independence (the fundamental premise and goal of neoliberal education systems). The prosthetic quality of his phone (Urry, 2007) is essential to his ability to network resources in order to construct meaning and context whilst moving through conceptual, physical and digital space (Davies 2014; Leander, et al. 2010; Pachler, et al. 2010) The next quotes show how B's thinking is reciprocally connected to his production of text on screen, sometimes typing but often using just his thumb to manipulate the necessary symbols:

> *"I don't know if you remember that you presented [a lecture on] schools and you had the vision the curriculum the building and so I had that on my Notes on my phone ... I wrote down the exact words and then I just wrote at the bottom 'reconceptualisation' ... so I took every word and changed the word... Because I wanted to reconceptualise everything to do with an education environment … it was reconceptualise think of something different and so like I just thought really urban {scrolling through fonts in the Phonto app with his thumb} ...{having entered the title text and changed the font} ... now what I really love about it is I could just take the text and do whatever I want with it so if I wanted to make it bigger I can make it bigger I could make it smaller if I wanted to if I wanted to spin round I could spin it round {demonstrating with his thumb} ... I'm just going to delete some of the text so you can see it a bit better ... if I wanted to make it fade a little bit into the background and what I really love about it is that I can just move it with my fingers ... it's just got that freedom to move as opposed to having a text box"*

The background image of the brick wall is manipulated in similar ways and serves to reinforce B's reconceptualisation. The photograph was taken in the university library, where B would often go to work,

and its presence further illustrates the mobility of technology, learner and learning underlying the apparently static text. B's ability to work flexibly and fluently across different devices frees him from the restrictions he perceives students working in more orthodox ways encountering. The devices enable him to work autonomously, creatively and spontaneously (Traxler, 2009) with combinations of image, font, colour and layout as he composes the ensemble:

> *"So then I was able to choose any image I wasn't restricted by settings on my computer so I was able to take a photograph of anything {indicating wall}...I had to pick an image which would make the text stand out because it needed to be inclusive in its presentation so one way I could go about doing that is by for example making the font itself a different colour so we could see it on a certain part of the photograph ... "*

> *" … what I loved about the wall is the way like all the bricks like this brick is honestly really really important to the structure but it's no more important than this brick ... I just thought urban in terms of a city really there's loads of people in the city from all different backgrounds and I personally think a school should be by an estate {scrolling through font colours} because you've got people who live you know rather than people having kids travelling all around the city so I liked the idea of an estate because I just like the idea of all different people from different backgrounds coming together so I had 'interdependence' and then I had 'community hub ... ' "*

What this quote reveals is that the textual/organisational features of title and image communicate more than just ideational meanings about B's reconceptualisation of education. They also point to B's own urban, working class background. In doing so, they reveal two levels of interpersonal meanings. On one level, they signify an intent to achieve a sense of closeness with the unfamiliar audience; that B is 'one of them' and is presenting his ideas in a way they can understand. On a second level, they communicate to B's tutors a degree of sophistication in the way he has interpreted the brief; they mark him out as a serious scholar who has acquired the appropriate academic literacies (Lea and Street, 2006). What is significant in this analysis is the 'anytime, anywhere' nature of the mobile literacy practices of creating and manipulating a complex, academic, multimodal text constructed in relation to these competing discourses (Davies, 2014). These practices are put to further work in the main body of the poster text, where B has to set out in more detail, and yet in an accessible way, his reconceptualisation. The section headings serve to orient the reader whilst simultaneously indicating key aspects of his inclusive vision. The body text expands on these ideas in relatively accessible language, balancing the needs of his two audiences, whilst the citations signify scholarship. These elements demonstrate how B has addressed the requirements of the brief and attended to the marking criteria. The smartphone prosthesis is crucial in enabling B to network the resources needed to distil his learning and vision onto a single sheet of paper as a complex, coherent multimodal ensemble:

> *"What I did was I took a photo of the wall and then I went to Phonto, uploaded a photo and then edited it slightly so you can see along the bottom it's got all different types of edits so I used that font that type of edit because it's dark around the edges a bit more urban {selects the Vignette filter with his thumb, creating the 'spotlight' effect on the bricks} and what I did was I entered my titles {switches to Pages} so Interdependent {says 'interdependent' into the phone and it appears on the screen, then types 'community hub' whilst continuing to talk; copies the text into Phonto} ... added my font in the middle of my work and then I justified it so that it was a bit clearer to see ... so I think I had it yellow like that ... and I tilted it a little bit so it was like 'interdependent community' and then what I had is my title so what I did then was I kept that program open but went across to my Pages documents where I have already got open you know mission 'the hub is a reconceptualisation' I'd copy that and I just add text paste {pasting in body text from his Pages document and repositioning it with his thumb to recreate the poster design} but I have to find a font that was more suitable I wanted to have a font which was quite sort of tight in because I had to sort of fit loads in ... see it is really easy see how see how quickly it's coming together ... I have loved it if I was to do this on PowerPoint it would be a text box ... whereas if I wanted to I could have I could have the letters coming around each other you see the way the 'value of others' comes around so I really like that sort of stuff dead quick dead movable just movable if I wanted to make one thing bigger emphasise that I could so that's why I decided to do that ... "*

Mobility is thus prevalent in B's narrative account of the production of his poster. His technological, internet-enabled, wi-fi and 4G connected devices are small, portable, powerful and always with him. B is mobile as a learner; he learns in the lecture theatre, though not necessarily only in the ways lecturers might anticipate. Rather than simply making notes, he is actively working in intertextual, multimodal ways on his assignment. He also learns and works on the bus, in the library and at home. He learns and writes through a combination of modes: text, voice, image and touch. He moves rapidly between apps to do so, with a kind of agility. The learning is also mobile; B has the freedom to work outside of taught sessions, computer labs or IT suites, thanks largely to the portability and connectivity of his devices. B is nexus, fluently networking resources to make meaning across space and time. Academic posters are nothing new, but B's interpretation and of written or symbolic representation in texts and practices mediated by mobile digital technologies perhaps is.

Conclusion

Smartphones and tablet computers are mobile devices which have rapidly become a major part of many people's lives, to the point where they may be considered prosthetics (Savin-Badin, 2015; Urry, 2007). The proliferation of these devices and the huge variety of activities they enable suggest that people are engaging in an array of mobile literacy practices. Surprisingly, given the near ubiquity of such devices, mobile literacies appear to be under-researched, under-theorised and lacking definition, especially compared to digital literacies and mobile learning. In this paper, I have attempted to contribute to build on previous work conceptualising digital literacies and mobile learning by offering a tentative definition of mobile literacies relevant to higher education. In my definition, mobility of technology, of learners and of learning is seen to underpin and enable the interpretation and manipulation of culturally located symbol systems, using mobile devices. Mobile literacies are characterised by interactivity, autonomy, spontaneity and creativity when working to make meaning on the move. B's narrative, describing and illustrating the literacy practices used in the creation of a complex academic text, together with a systematic multimodal analysis of this text, exemplify mobile literacies as defined in this paper. The analysis shows how B is able to work flexibly and fluently across several devices and apps, in any location, at any time, in order to construct his text. The context and environment are fundamental to this way of working: despite his poster's critique of the neoliberal agenda, B relies on heavily on the world's richest corporation, as well as the telecommunication infrastructure of the contemporary UK and the wi-fi resources of the university, to set down his vision. Meanwhile, the open nature of the assignment brief and the spirit of enquiry inherent in a university support his creativity and autonomy. These factors, together with B's learning preferences and dispositions, ultimately shape his text, as do his devices. The analysis also supports the view that research into the literacy practices of university students may yield further insights into new and emerging mobile literacies, and I propose that other researchers and educators consider this population for investigation. Researchers may wish to explore the prevalence of the practices here described, the emergence of other, related practices, as well as the implications for teaching, learning and assessment in higher education.

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