Challenging The Mobile Learning Paradigm

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The established mobile learning paradigm is now two decades old; it grew out of the visions and resources of e-learning research communities in universities in the world's more economically developed regions. Whilst it has clearly been able to demonstrate many practical, pedagogic and conceptual achievements, it is now running out of steam. It has failed to adapt to a world where mobile technologies are pervasive, ubiquitous and intrusive and where people and communities can now own their own learning. This paper looks at the evolution of the established mobile learning paradigm and explores the current global, demographic, social and technical environment in order to develop a new paradigm more suited to the changed and changing realities and priorities. This is mobile learning2.0.

Keywords: mobilities ; mobile learning ; paradigm shift

1. Background: The Established Mobile Learning Paradigm

So, we start by outlining the history, form, and content of what we are calling the established mobile learning paradigm. It dates back to approximately 2001, the year of the first mLearn conference, held at the University of Birmingham in England [1]. We must remember that at this point, until perhaps 2008 (this is an arbitrary date and varies across definitions, countries, sectors and demographics), mobile technologies were expensive, fragile, scarce, difficult and consequently the necessary experience and expertise were institutional and professional. This was an era when phrases like technology-enhanced learning (TEL) [2][3] had a meaning, drawing attention to the positive and noteworthy addition of digital technology, including mobile digital technology, to learning. Once technology becomes ubiquitous and pervasive, such phrases merely draw attention to the disconnect or inadequacy of education systems compared to the rest of society outside those education systems. As a forward reference, to be picked up later, we should remind readers that at a certain point, again perhaps 2008, mobile technologies became cheap, familiar, easy, robust, and personal, social and recreational, at which point the established paradigm of mobile learning started to get left behind. In a different sense, it was left behind as activity shifted away from research findings to business models and the centre of gravity shifted across the Atlantic, with the public take-up of the smartphone, as epitomised by the iPhone. The telling phrase, the apps economy, surfaced around this time [4].

To start at the beginning, the 'mobile learning' community's research agenda grew out of the aspirations and interests of the e-learning research community. It grew in an era when institutions of formal education were the recognised and obvious mechanism for increased social mobility, enlarged educational inclusion and increased economic opportunity for many people in our communities and in the few places where networked computers would facilitate this mobility, inclusion and opportunity [5]. We have argued elsewhere [6][7] that the mission of opportunity, participation and inclusion that characterised much educational policy and activity in 1990s was a failure in its own terms, but in the 2000s became increasingly irrelevant as the institutions lost their monopoly of the digital technologies that facilitated learning, especially facilitated learning for less privileged learners. This was the point in history where we argue that 'mobile learning' lost its relevance to the wider world.

As we have stated, initially 'mobile learning' emerged out of the e-learning communities of the global North leading up to the turn of the century and inheriting some of the e-learning visions, theories and personalities [8][9]. At this stage mobile learning bought into the prevailing ethos of small-scale and state-subsidised highly-theorised curiosity-driven trickle-down innovation, facilitated by researchers with the necessary technological and pedagogic skillsets, in research-active universities in some 'mobile learning' hot-spots, mostly western Europe, Asia Pacific and also in some more widely dispersed individual institutions [10]. This was an understandable response to the pressures and opportunities of the time and saw 'mobile learning' seeming to deliver on the promise of 'learning anytime anywhere' that had eluded the tethered e-learning [11] community, essentially however reforming digital learning rather than transforming it, offering not just 'learning anytime, anywhere' but soon 'learning-just-in-time' and 'learning-just-for-me' [12]. We argue that ultimately 'mobile learning' merely reconfigured the nature of the 'tethering', still tying learners to schools, colleges and universities, now physically off-campus but still connected to and dependent on enrolment, lecturers, curricular and assessment.

In this first decade, there were practical, pedagogic and conceptual achievements including demonstrations of ways in which formal education could be enriched by becoming more contextual, social, situated, authentic, personalised [13] and by augmented reality, recommender systems and real-time simulations. These did, however, in the course of the first decade of 'mobile learning' all evolve from experimental systems to retail commodities. In terms of theory, we saw the 'mobile learning' research community engaged with Activity Theory [14][15], the Conversational Theory [16][17], Actor Network Theory [18] and rhizomatic learning [19][20] and a socio-cultural ecology [21], amongst others. There were also demonstrations in the same accounts that mobile learning could not only transcend geographical or geometric distance but also social and economic distance, reaching out to different kinds of community, but as I myself pointed out in the USAID mEducation Alliance keynote of August 2012, this was always 'our' learning not 'theirs'.

The 'mobile learning' community however did not move with the times, as we said earlier, as mobiles transitioned from being fragile, scarce, difficult, complex and expensive, to being cheap, easy, robust and universal; nor did it respond the withering of state enthusiasm and state resources entering the second decade of the century. One major missed opportunity was the exploration of 'contextual mobile learning' as a sustainable pervasive collaborative social experience of locality, environment and history [12] as location-aware smartphones became widespread in Europe.

Furthermore, the community did not make the transition from the web1.0 world, where the majority consumed what the minority produced, to the web2.0 world, where the majority consumed what anyone and everyone produced. This is perhaps a different way of asserting that universal mobile technology challenged the monopoly on learning previously held by education systems. Either way, the apparent benefits of 'mobile learning' did not trickle down from the global North to the global South, in spite of the mobile's intrusive ubiquity in most of the communities of the South from the very earliest days. What was true of the hardware—it became cheap, easy and robust—also became true of the software. In fact, increasingly non-technical users were shielded from complexity as the simplicity of interactions became paramount as the permutations and possibilities of functionality became saturated.

There were inherent contradictions in this first decade and these are part of the explanation of the failure to move forward. In these early formative days, the most trustworthy evidence came from research that used the same consistent hardware platform, that is the same mobile device, provided by the project, across the whole population of research subjects, that is the learners, thus eliminating device-variety as a confounding variable. This was however not a realistic scenario. Scaling up and sustainability depended on learners using their own diverse and ever-changing platforms, the bring-your-own-device (BYOD) scenario [22]. The paradox was that the best evidence was the least useful. This was however only relevant within the closed domains of formal education. Increasingly these closed domains became permeable as mobile phones became pervasive and ubiquitous in students' lives in the real, outside world. The positivist mindset of researchers was progressively less useful as the post-positivist world leaked into the classroom and the lecture theatre. So, at the risk of parody, the positivist researchers were increasingly enclosed in a post-positivist world, and their largely psychological perspectives were failing to keep up with sociological realities. This change was transforming learners with no mobile experience or expectations, into learners with enough mobile experience and expectations to overwhelm the pre/post empirical settings for the dedicated educational app under investigation [23]. Research could no longer rest on the assumption that learning with mobiles was somehow disconnected from the outside world.

A further irony was the status of 'disruption' within the mobile learning research community [24], which was touted as a significant attribute of mobile learning in its first decade. Disruption is either 'weak', meaning classes being disrupted by incoming calls, or 'strong', meaning the authority of the teacher being challenged by alternative sources of information, was to be a major stimulus and provocation to conservative education systems. The irony was that this talk of 'disruption' was coming from established academics entrenched in apparently secure and conservative institutions which might themselves later be disrupted by the new epistemologies of pervasive movement and connectedness.

We can look at the demographics and bibliometrics of the published 'mobile learning' research community and these too are sometimes worrying, with authors, speakers, reviewers, editors, publishers, and readers from the global South under-represented in the journals and conferences actually devoted to their own region, or not devoted to thinking about their region in the ways that they themselves thought about it. There is also a perception that could be tested statistically or bibliometrically, namely that the literature of 'mobile learning' has become largely conservative and self-referential, feeding off itself for ideas and authority. A look at my own bibliometrics served up by Google Scholar might make this point indirectly. I have written on mobile learning for over two decades and have well over 9000 citations. When I look at which papers are getting cited, it is overwhelmingly those from the first decade, those that mostly dealt with pedagogy and technology, were upbeat and were generally endorsing and analysing 'mobile learning', rather than those from the second decade, dealing with wider societal, ethical, critical and philosophical issues. The latter were, I must admit, downbeat and have not made much of an impression, suggesting that researchers seem happier continuing to buy into the established version of 'mobile learning' rather anything that might unsettle it.

2. Results: A New Paradigm—Mobile Learning2.0

We are arguing now for a new mobile learning paradigm, *mobile learning2.0*. This must grow out a changed understanding of our world, a world now characterised by incessant movement and perpetual connectedness, a world where the modernist European enlightenment no longer has its former global authority. So, the foundational axiom for our new paradigm is underpinned by a comprehensive worldview based "five highly interdependent 'mobilities' that form and re-form diverse networks:

- corporeal travel of people for work, leisure, family life, pleasure, migration and escape;
- physical movement of objects delivered to producers, consumers and retailers;
- imaginative travel elsewhere through images of places and peoples upon TV;
- virtual travel often in real time on the internet so transcending geographical and social distance;
- communicative travel through person-to-person messages via letters, telephone, fax and mobile." [25]

These mobilities transform the foundations of learning and knowing. Whilst it is easy to read them as applicable to the affluent global North, we read them as globally applicable and prioritise the less affluent in order to 'level up'.

The ethos of 'mobile learning' is based on understandings of a static Eurocentric worldview that are no longer relevant.

Our foundational axiom, adapted from an earlier work [26] is;

in most societies today, characterised as they are by permanent, ubiquitous and pervasive connectedness and mobility, … learning and digital technology are no longer separable or discrete; they are merely aspects of the ways things now are, skewed however by the powerful interests that control bandwidth and connectivity, that control the design and manufacture of technology, that control education systems and economic opportunities.

We say that learning, digital technology and society are fused and inseparable; one is never found without the other two, though the learning may not be the recognised or authorised form, it is nevertheless out there.

In the context of a paradigm, this axiom only has to be plausible, not objectively or verifiably true; it has to be more useful and effective in resolving discrepancies and discomforts than the earlier paradigm, namely those discrepancies and discomforts of 'mobile learning' outlined earlier. This new paradigm cannot be empirically proven because it is the paradigms that define the framework by which any empirical evidence is understood, not the other way around. In fact, the relationship between two paradigms might be comparable to that between rabbit and the duck in the popular visual ambiguity [27], except that here experiences irreversibly shift the perception from the older to the newer.

A paradigm's primary role is defining a research agenda and its research questions. In our case, these are, (adapted, abbreviated and revised from [26]).

Firstly, 'what characterises and differentiates these societies, from each other and from earlier models of society?', and in terms, for example, of social practices and norms, political organisation and activity, economic transactions and commodities, expressive and creative genres, the nature of culture and hegemony, the nature of epistemology and ontology, that constitute the rationale, the contexts and the foundations of learning; in terms, for example, of the nature of exclusion, development, disenfranchisement and disadvantage, and of capital(s), power and privilege; in terms, for example, of our ideas of self, identity, community, relationships, and in order to help understand, the paradigm shift being outlined, how does our depiction of societies align or interact with other depictions of societies, perhaps the postdigital or futures [28]?

Secondly, in the context of the mobile perspective on societies and cultures, 'what is the nature of learning, and what is its purpose?' which leads to more specific and practical questions about the definition and nature of epistemology, pedagogy and didactics, and then how 'should we conceptualise the roles and responsibilities of educators, their organisations and institutions, and their practices and procedures, such as courses, exams, qualifications?' and 'what is the nature of learning within our paradigm in relation to existing pedagogic theories such as connectivism, constructivism, heutagogy etc.'

Thirdly, 'what is the nature of language?', meaning 'what are the symbols, conventions, interactions, contexts, media and gestures that constitute the language used to exchange meaning and feeling, that underpin learning, knowing and understanding, transmitting and preserving them? 'How do we understand the status of dialects, lingua franca, mother

tongues, indigenous languages and global power languages in a world where so much language is mediated digitally? What and who now owns, shapes and controls language?' 'How, to focus on technological aspects, do real-time translation, voice activation, auto-correct, emojis and home automation change, for example, the nature of language, community and communication, and consequently of learning [29]?' and given the implicit postmodernity of our axiom, 'what is the nature of language in shaping the society we describe in our axiom, compared to the modernist position that language merely records it?'

Whilst language has always been in some senses the property of some hegemony, the current hegemons are mostly anglophone global digital corporations and our axiom explicitly recognises and problematizes this observation. Language is the medium of learning and of research.

So we ask, fourthly, 'what is the nature of research?', that is, 'what are the methods, tools and techniques; what constitutes proof, reason, logic, trustworthiness and authority?' How do we explore the changed human condition and its social context?' 'How in practical terms, would the research community operate in a world of fractured fluidity? Are journals, conferences, studentships and the other formats still adequate? Are questionnaires, surveys, focus groups, semi-structured interviews and other accepted research tools still sufficient?' We have made an opportunistic attempt, prompted by the needs of the pandemic, to start to explore this issue and map some principles and some possibilities [30].

We need these as the basis for researching and supporting learning, howsoever this is now understood.

These are not new questions—there is no reason why they should be—but the old questions addressed within the context of the new paradigm's defining axiom and ethos. They are ambitious for an educational paradigm but remember that there is, for example, a straight line from mobile digital technology to increased popular radicalism via the Arab Spring and the cyber-Intifada, and from global corporate capitalism to fragile mother tongues via the information superhighway. This now has added impetus as responses to COVID-19 re-invigorate every aspect of conventional institutional digital learning whilst ignoring the potential for innovative and inclusive learning with mobiles outside conventional educational institutions.

The consequences of articulating this paradigm are not only the formulation of a new research agenda, but also the development of scholarly community and the foundational texts. Furthermore, an open and resilient paradigm should look to other disciplines, beyond the historical e-learning research communities, for stimulation, tools, concepts, methods and collaborators. The most obvious community is the mobilities turn within sociology [31][32][33]. This not only espouses mobility and connectedness as the defining characteristics of our world and its societies but currently also lacks any significant learning dimension [34][35]. Other kindred and complementary communities are those advocates of critical pedagogies with digital interests [36][37], and researchers in the m4d, ICT4D [38] and HCI4D communities [39][40] with interests in learning and decolonisation [41][42], perhaps decolonising the curriculum, perhaps decolonising research methods. This resonates with our desire to see a mobile learning paradigm that makes no Eurocentric or Northern assumptions, and recognises the unique and universal place of mobile digital technologies, a counterbalance to the schools, state education systems and scaled corporate digital learning that are the strongholds of the established 'mobile learning' paradigm.

3. Tools and Techniques to Deliver This New Paradigm

Having briefly addressed which other schools and disciplines might inform or support our new paradigm, it is important to also review the tools and techniques that might enable its adherents to actually deliver it. There are, of course, some caveats. One is the need to recognise cultural and contextual specificity; not to impose general, static or universal solutions, in fact not to impose anything, but to look for methods and formats that will enable community appropriation and sustainable ownership, and enable collaborative adaptation and participative development. Another is to build for change, indeed for instability, transience and chaos, and specifically now to recognise that the current global pandemic means that no trends or projections can be trusted, that both the central focus of learning with mobiles on pedagogy and technology and its surrounding penumbra of society, culture, economics, nations and politics will transform and that the existing distribution of educational, digital and economic capital will be disturbed and disrupted, most likely in favour of those with most already.

Whilst these remarks sound like the language of enlightened international development directed at marginal communities in the global South, they are intended to be read as applying as much to the global North, its marginal communities and its mainstreams. Our argument is that mobility and a new worldview mean that we have to start from scratch, from a tabula rasa, in understanding learning needs, their specific cultural contexts and the forces that shape, press and distort them. It

is, however, logical, methodological and ethical to start from the perspectives of the disadvantaged or the marginal of the global South and North, their people and communities, since not only does this more starkly expose the forces at work in our societies but also it addresses the biggest challenges first making later, smaller ones easier.

Our proposal here is outlined in three stages. The first is to argue that the research tools and techniques that we currently use to understand the lives of people and their communities are based on a static, stable, Eurocentric and supposedly homogeneous, or perhaps hegemonic, view of the world and its cultures and that in a mobile and culturally heterogeneous world, a palette or portfolio of more appropriate research tools and techniques are needed, appropriate to each different culture, each mobile and learning in its own way [30]. This in turn argues for the research ethics and research governance that are aligned to this new ethos. The second is to argue that that the ubiquity, pervasiveness and universality–nearly–of personal mobile digital technologies means people are familiar and confident with a wide variety of web2.0 applications, functions and affordances, which they already use to create images, ideas, information, identities, communities and opinions and to share, review, transform, merge and discard them [43]. The third is to argue that there is a host of emerging and innovative pedagogic ideas coming out of web2.0 technologies that are suitable for adapting and combining to suit specific cultural and environmental contexts [44] in ways that would enable any community, including the most remote or the most mobile, to create, develop and control their own digital learning spaces [45][46]. This host is not definitive. It was chosen to represent possible pedagogies that give agency and autonomy to mobile learners in our mobile societies, rather just those ‘tethered’ to an institution of formal learning, reflecting a web2.0 world not a web1.0 world. It was also chosen to give access and opportunity to communities, North and South, further from the dominant mainstreams of the global digital.

The roles and responsibilities of researchers—and of innovators, activists and advocates—in the new mobile learning paradigm are to facilitate processes by which learners with their personal technologies and in amongst their mobile communities can define, own, produce, share and consume their own learning, can learn from each other, their experiences and their environment, physical and digital.

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