THE THEORY PAPER: WHAT IS THE FUTURE OF MOBILE LEARNING?

John Traxler *and Marguerite Koole**
*Wolverhampton University **
*Athabasca University ***

ABSTRACT

Mobile learning is often described as ubiquitous, pervasive, accessible, and transparent. It has been seen as providing opportunities for those who could not previously cross existing digital divides—though it of course may create new ones. Yet, some work in the field lacks sufficient and appropriate grounding in theory to effectively address such needs. Theory determines what we observe, how we observe it, and what we deem valuable. Theory has power; it can affect how people live and how they view the world. In the case of mobile learning, it can affect how people access and interact with the world. In order to ensure adequate access to knowledge and resources, we must fight against uncritical, clichéd theory and against naïve or tacit theory, and consider the exploration of theoretical perspectives outside the dominant modernist Western-European perspectives and perhaps outside those of late-global capitalism. Research and practice needs to be grounded in well considered theoretical perspectives that take into account the local and the global; the overly represented and the excluded; the global South and the global North. In this paper, we argue for an ongoing and increasingly sensitive role for researchers and theoreticians as well as a reexamination of extant theories in mobile learning.

KEYWORDS

Mobile learning, theory, global North, global South, colonisation, industrialisation.

1. INTRODUCTION

Without wanting to re-enact the definitional skirmishes that have characterised the last thirteen years, there are basically two centres of gravity. The first one is attempting to capture the essence of research, development, and deployment that occurred as a consequence of mobile technologies offering greater and greater opportunities, ideas, and inspirations to the e-learning communities within innovative Anglophone universities of the global North. The second one is grappling with the impact of ubiquitous and pervasive mobile systems on the communities and cultures of the global North and global South[1], mainly the former and certainly not coherently, the impact (and influence) particularly on local and indigenous epistemologies, ideas about what is worth knowing, learning, sharing, teaching and discussing, and how it comes to be known, understood, preserved and replaced, and how mobile systems transform earlier modern notions of epistemology into newer, transient, partial, subjective, post-modern, and post-humanist ones. These could be seen as perspectives that respectively look backwards and look forwards from an era when mobile technology was scarce, obscure, fragile, expensive, and 'other' to an era when mobile technology has become universal, robust, easy, obvious, cheap, and variously described as 'embodied' or 'prosthetic'. As the relationship between human and machine develops (though very differently in different cultures), our questions of the nature of this relationship become more daunting and potentially transformative: whose values and whose perspectives should dominate this relationship?

[1] The global "North" and the global "South" is used to reflect the axis between developing and developed, less-technologised and technologised, rich and poor. These terms are being used to achieve the less pejorative connotations (see Black, 2002). Whilst this can be placed in a more critical framework, it nevertheless ignores the equally compelling East-West dialectic or the resurgence of perspectives from Islamic history and culture.

Theory is increasingly important as learning with mobiles becomes more popular and widespread. Practitioners, managers and policy-makers, and the population as a whole, have become more familiar and confident with increasingly powerful mobile technologies. As learning with mobiles becomes in some senses self-explanatory and self-evident, theorists have dropped out of the picture as ministries, agencies, and corporations invest in learning with mobiles—theory is no longer necessary. In fact, theory still operates in this new configuration, but often it is simplistic, uncritical and tacit in the form of clichés such as 'keep it simple stupid' or 'content is king'. This is difficult when mobile learning research itself is sometimes short on theory: an early review of the mobile learning research literature (Traxler & Kukulska-Hulme, 2006) found many accounts of research projects that were not always based rigorously and robustly on a theoretical underpinning. Further examination of theory is needed in order to determine whether or not Northern theories are useful in diverse Southern contexts and vice-versa. What are the implications of transplanting theory? And, what would be the effects of not experimenting with non-local theories?

2. PROBLEMS WITH THEORY IN THE FIELD OF MOBILE LEARNING

Theory affects what we observe, what we perceive, how we explain what we observe, what we deem valuable, what we deem subject and/or object, and how we connect observations, values, and existing 'knowledge' (Neuman (2003). To an extent, theoretical work is akin to 'sense-making' (Weick & Sutcliffe, 2005), but through a lens that looks both forward and backward in an effort to both evaluate and rationalise practices and beliefs. Theory in technology may be thought of as "a special form of discourse or expression, specifically designed to hold knowledge, but at the same time, recognise their cultural and human foundations" (Wilson, 1997, 9). But, what does it mean to hold knowledge? And, how are such foundations recognised? Creswell (1998) suggests that theories in the social sciences "provide an explanation, a predication, and a generalisation about how the world operates [either] at the broad philosophical level or at the more concrete substantive level" (p. 84). Post-humanists might suggest "theory today is about coming to terms with unprecedented changes and transformations of the basic unit of reference for what counts as human" (Braidotti, 2013, p. 104).

The theoretical tools we use can shape what we see and what we make. In her work on agential realism, Barad (2007) suggests that the choice of apparatus being used in research determines which properties become determinate and is not solely under the direct control of the researcher. We might add to this idea by suggesting that the properties that become determinate are somewhat *more* under the control of the researcher who is aware of the social, cultural, and philosophical origins and exclusions of the underlying premises. An individual's view on the meaning of theory is based upon ontological, epistemological, and teleological presuppositions—the acceptability of which is often affected by his/her local, cultural, and geographic positioning. We argue that, in the field of mobile learning, we must become aware of the origins and effects of our theories on praxis: how do our local values affect selection, development, implementation, and the human-culture-machine relationship?

In addition to lack of awareness of our theoretical lenses, there are other possible issues with the use of theory in educational technology: incommensurability of method and theory; lack of depth in reflection; lack of communication between theorists and practitioners, or between theorists of divergent perspectives and differing disciplines; a reliance on jargon and simplified, unclear thinking; and, lack of respect for theory and intellectual work (Wilson, 1997). Braidotti (2013) draws attention to Lyotard's call for a move away from grand theories towards specific theory; "a position between universalistic pretentions of standing outside space and time on the one hand, and narrow empiricism on the other" (p. 157). What she suggests is a move towards specific theory that is grounded in and accountable to practice, but is also extensible to other uses beyond the local. It is in this extensible space that we might bridge between divergent world-views—between the global North and the global South.

Leading lights in mobile learning have sometimes made arbitrary choices about where they look for ancestors and antecedents. Their choices are often driven by a notion that mobile learning is descended from e-learning. So, the arbitrary choices include psychology, artificial intelligence, cognitive psychology, and educational technology—but often sociology, information systems, and anthropology have been less well represented in the field. The derivation of the theory has, as such, followed on logically to include theorists such as Vygotsky, Pask (1976), Laurillard (2002), and Sharples, Taylor and Vavoula (2005). What is

problematic is not related to the valuable work of these scholars, but the lack of inclusion of other scholars from the excluded indigenist, feminist, and/or Southern domains; furthermore the transition of mobile learning from an innovative e-learning programme to an abiding and defining characteristic of most societies places it a long way from its origins. Even more disturbing is the dismissal of theory within the context of capitalist and neo-conservative interests of some of the northerly governments. Braidotti (2013) laments the rejection of theory as unnecessary academic vanity and sees a move within the humanities towards data-mining in research. She suggests that we need to eschew conventional ways of thinking, to deterritorialise theory in the Deleuzian sense (Deleuze and Guattari, 1987). To what extent can we deterritorialise mobile learning? Can we shift away or meld with perspectives outside the more Northerly-centered cognitivist and post-positivist foundations? And, equally important, is this desirable?

3. INDUSTRIALISATION OF HIGHER EDUCATION

Elsewhere (Traxler, 2011) we have developed the proposition that large-scale e-learning is integral to the industrialisation of higher education. It had been conceptualised as such already (Tait, 1993; Illich, 1971; Peters, 1994) and was in part a response to the prevalent political agenda of participation, inclusion and opportunity. We argue that we are at a point where the first generation of industrialised learning has delivered all it can and we see an emergent second generation. Risking oversimplification, the first generation was characterised by inflexible Fordism, the production line; it was driven by the institutions that managed change from the top, from the centre. This first generation emphasised (the lack of) evidence for policy and for the deployment of technology in learning. This is understandable given the evidence-based context, but increasingly, technology became the ubiquitous social norm, digital divides were recognised as complex and counter-intuitive and the role of evidence was changed (or removed).

Manufacturing has become global and ‘just-in-time’. This second generation of learning will be user-driven, or rather consumer/customer-driven, perhaps a neo-liberal nightmare of choice; institutions must respond to the unmanaged pressure from outside that comes from increased ownership, familiarity and expectations around universal personal technologies. Increasingly, technology happens outside institutions, inside which students claim that they are forced to 'power down’. Our questions at this point are to ask whether this represents merely reactions to shifts in the markets of higher education or something more fundamental. Shifts in location of influence are inherently political in affecting social and economic practices (Black, 2002). As universities rely upon mass customization to catch up to corporate practice, adaptation and expectations of local individuals using *universal personal technologies* (in the Deleuzian sense of *becoming machine*) may challenge the corporate powers, these will be situated in radically different cultures and societies and universities compete for global markets.

Previously, technology was ‘other’; it was a dumb conduit, a dumb container for learning; it merely enhanced or supported learning, and it merely serviced the existing order. Now technology is portrayed as socially transformative; technology ‘is us’ (Rettie, 2005). The first generation of e-learning was Web1.0, the web (and the educator) as broadcaster and students were readers; the second generation was Web2.0, everyone as writers and readers. As mobile learning becomes normalized, are technologies reshaping us as entities? Now knowledge is created locally, partially, contingently, for-me, and for-now. Ideologically, social constructivism was the dominant espoused pedagogy of the North, though behaviourism was probably the dominant enacted pedagogy. Education, psychology and computing were the foundations of e-learning, not sociology or information systems. The second generation was expected to develop new ideologies, perhaps connectivism (Siemens, 2005) or navigationism (Brown, 2006) for the 'epistemological revolution' (Des Bordes & Ferdi, 2008). There is however an argument that technology always embodies an ideology, or in this case a pedagogy, and whilst users may appropriate the technology and over-write the ideology, it is certainly not the case that technology is neutral. In fact, we have seen the original MOOC ideology over-written by a more corporate one, and the new ideologies have lost ground and the existing institutions have colonised and co-opted a transformative space. That at least is the rhetoric and ignores the capacity of institutions to appropriate and colonise these new forms and genres. Instead, participative media are being transformed back into the outlets for the corporate message. Our question now is whether what we have portrayed as a second generation of e-learning is merely the tactical reaction of a fundamentally unchanged system to a changing technical and global environment, or whether it represents a local response from outside the system to manifestations of crisis around the system.

4. THEORY AND THE 'SOUTH'

In looking at our analysis of theory, the standpoint of our epistemology is inherently Northern and Western—a perspective that is embedded into technologies and pedagogies. We must address this bias and attempt to frame analysis within a more fluid and complex context. We implicitly assume that the western/European model of universities and their modes of reasoning and theorising are necessarily the sole or best expression of a culture's or a community's higher learning and intellectual enquiry and endeavours. In the days before e-learning, educational interventions in distant and different communities were difficult and thus the danger to indigenous epistemology and theory was remote. Mobile learning now makes these interventions and activities easy, and thus local and marginal, and indigenous forms of understanding and learning are threatened. Education is in many ways a process of acculturation and identity transformation of non-traditional working class and indigenous students in the North and of those in the South. How do we reconcile accessing national educational opportunities and the theoretical biases to exploit these with the preservation of culture and local theory?

5. CONCLUSIONS: FROM NORTH TO SOUTH

In light of this history of distance education and mobile learning, we return to the conventional versus the contingent at the practical level. Theories of 'conventional' e-learning rest on the experience of stable technology platforms; the dominant and enduring nature of operating systems along with their input and output conventions and other computing standards. E-learning 'appears' to take place in a technological environment that is consistent, homogeneous and transparent; the technology (apparatus) no longer gets in the way. Furthermore theorizing about mobile learning—compared to e-learning—is problematised by the fact that mobiles are a massive social and popular phenomenon not a merely minor educational and institutional one, where attitudes, usage and expectations are characterized by appropriation, fragmentation, and transience. Consider emerging concepts such as 'nomadic subjectivity' in which our identities and the perceptions of the devices we use are in constant flux. Such a conception stands outside the terms associated with the conventional technologies built within Northern and western-European theoretical perspectives. To what extent can stable protocols and standards address contingent, ongoing shifts in subjectivity and practice or local/alternative world views? The technology platform upon which mobile learning theory might rest could be, by comparison, volatile, inconsistent and haphazard; otherwise, the work of understanding mobile learning, couched in the terms and practices of conventional technologies, is impeded. We remain frightfully unaware of the connotations of our Western, Eurocentric vocabulary and presuppositions that have muddied the theoretical waters of mobile learning.

Mobile learning needs a 'theory of technology' that is based in its own terminology and to include those perspectives which have been excluded. We could argue that the mobile learning community in looking for theory is—to oversimplify—is faced with three different options and dilemmas: 1) import theory from 'conventional' e-learning and worry about transferability to m-learning; 2) develop theory *ab initio* locally (culturally and economically specific) and worry about validity and generalisability; or 3) subscribe to some much more general and abstract theory and worry about specificity and granularity (applicability to local problems). Although the last thirteen years has brought important advancements, at this juncture we recommend a reexamination of what mobile learning theory is and could be by revisiting the various existing theories of mobile learning. In this paper, we have begun to explore the meaning of theory and its necessity in mobile learning, yet there are still many questions that must be asked. This paper represents an invitation to m-learning theorists and practitioners to explore alternative perspectives in which we include the previously excluded.

REFERENCES

Barad, K. (2007). Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning. Durham, UK: Duke University Press.

Braidotti, R. (2013). The posthuman. Cambridge, UK: Polity Press.

Barber, K. (Editor in C. (Ed.). (2004). The Canadian Oxford dictionary (2nd ed.). Toronto, Ontario: Oxford University Press, Canada.

Black, M. (2002). *The no-nonsense guide to international development*. Oxford, UK: New Internationalist Publications Ltd.

Brown, T. (2006) Beyond Constructivism. Navigationism in the knowledge era. On the Horizon, 14(3) 108-120.

Creswell, J. W. (1998). Qualitative inquiry and research design: Choosing among five traditions. London, UK: Sage Publications.

Crompton, H. (2013). A historical overview of m-learning: Twoard learner-centred education. In Z. L. Berge & L. Y. Muilenburg (Eds.), *Handbook of mobile learning* (pp. 3–14). New York, NY: Taylor & Francis Ltd.

Des Bordes, A., & Ferdi, S. (2008). Do knowledge and new technologies need a new epistemology? In Proceedings of BOBCATSSS 2008: Providing Access to Information for Everyone. Zadar, Croatia. Retrieved from http://edoc.hu-berlin.de/conferences/bobcatsss2008/des-bordes-anne--115/PDF/des-bordes.pdf.

Deleuze, G., & Guattari, F. (1987). A thousand plateaus: capitalism and schizophrenia. Minneapolis: University of Minnesota Press.

Gilmore, James H. & Pine, B. J. (1997). The four faces of mass customization, in J. H. Gilmore & B. J. Pine (eds.), Markets of One, President and Fellows of Harvard College (pp. 115-132), Boston MA.

Illich, I. (1973). Tools for conviviality. New York: Harper and Row.

Laurillard, D., (2002), Rethinking university teaching: A conversational framework for the effective use of learning technologies, (2nd ed.). Routledge Falmer: London.

Neuman, L. W. (2003). Social research methods: Qualitative and quantitative approaches. Boston, MA: Pearson Education Inc.

Pask, G., (1976) Conversational techniques in the study and practice of education. British Journal of Educational Psychology, 46, 12-25.

Peters, O. (1994). Distance education and industrial production: A comparative interpretation in outline (1973). In Keegan, D. (Ed.), Otto Peters on distance education: The industrialization of teaching and learning (p. 107-127). London: Routledge.

Rettie, R. (2005). Exploiting freely available software for social research. Social Research Update, 48, 1-4. Retrieved from: http://eprints.kingston.ac.uk/2079/.

Siemens, G. (2005). Connectivism: A learning theory for the digital age. International Journal of Instructional Technology and Distance Learning, 2(1). Retrieved from http://www.itdl.org/Journal/Jan_05/article01.htm.

Sharples, M., Taylor, J., & Vavoula, G. (2005). Towards a theory of mobile learning. Retrieved from http://www.mlearn.org.za/CD/papers/Sharples- Theory of Mobile.pdf

Tait, A. (1993). Systems, values and dissent: Quality assurance for open and distance learning. Distance Education, 14(2): 303-314.

Traxler, J. (2011) Context in a wider context, Medienpaedagogik, Zeitschrift für Theorie und Praxis der Medienbildung. The Special Issue entitled Mobile Learning in Widening Contexts: Concepts and Cases. N. Pachler, B. Bachmair & J. Cook (Eds.), 19. Retrieved from: http://www.medienpaed.com/19/traxler1107.pdf

Traxler, J. & Kukulska-Hulme, A. (2006). The evaluation of next generation learning technologies: The case of mobile learning, in Research Proceedings of ALT-C2006. Oxford: ALT.

Traxler, J. (2008). Learning in a mobile age. International Journal of Mobile and Blended Learning, 1(1), 1-12.

Traxler, J. (2011) Mobile learning: Starting in the right place, going in the right direction? International Journal of Mobile and Blended Learning, 3(1), 57–67.

Weick, K. E., & Sutcliffe, K. M. (2005). Organizing and the process of sensemaking. Organizational Science, 16(4), 409–421.

Wilson, B. G. (1997). Thoughts on theory in educational technology. Educational Technology, 37(1), 22–26. Retrieved from http://carbon.ucdenver.edu/~bwilson/theory.html